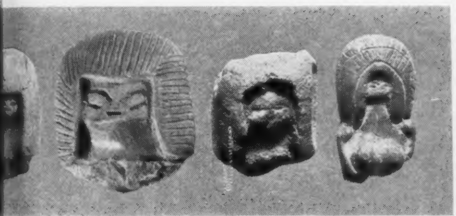
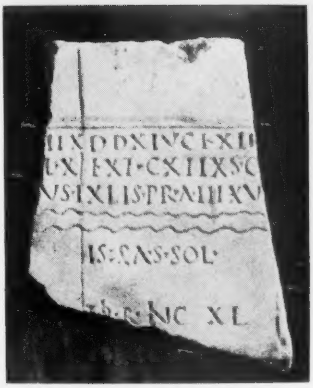




ARCHAEOLOGY

AUTUMN 1958 VOLUME 11 NUMBER 3 $1.25

ARCHAEOLOGY

A MAGAZINE DEALING WITH THE ANTIQUITY OF THE WORLD

VOLUME 11 NUMBER 3 SEPTEMBER 1958

CONTENTS FOR AUTUMN 1958

ARCHAEOLOGY is indexed in the ART INDEX

ARCHAEOLOGY is published quarterly in March, June, September and December by the ARCHAEOLOGICAL INSTITUTE OF AMERICA, 5 Washington Square North, New York 3, New York. Publication Office: 73 Main Street, Brattleboro, Vermont. Second class mail privileges authorized at Brattleboro, Vermont.
Subscriptions and advertisements should be addressed to the Business Manager at 5 Washington Square North, New York 3, New York (Telephone: ALgonquin 4-5710). Subscription, $5.00 per volume. Single numbers, $1.25. Members of the ARCHAEOLOGICAL INSTITUTE OF AMERICA may choose ARCHAEOLOGY as a perquisite of membership. Please give four weeks' notice of change of address.
Manuscripts and books for review should be sent to the Editor at 211 Jesse Hall, University of Missouri, Columbia, Missouri.
 Printed by The Vermont Printing Company, Brattleboro, Vermont.

POSTMASTER: Send Form 3579 to Archaeology, 5 Washington Square North, New York 3, N. Y.

By DERICKSEN M. BRINKERHOFF

GREEK AND ETRUSCAN ART

THE STANDARDS OF DESIGN revealed by the American displays at the Philadelphia Centennial Exposition in 1876 led to the founding of a museum and school by a group of Rhode Island women. Aroused by the lack of artistry displayed in many of the domestic manufactured objects, they were favorably impressed by the British exhibit sent from the technical school of South Kensington. The constitution of Rhode Island School of Design provided for instruction in various arts, and for the "general advancement of public Art education by the exhibition of works of Art." Hence the origins of the school and its museum parallel the establishment twenty-five years earlier in London of the Victoria and Albert Museum and its school as a result of the famous international exhibition at the Crystal Palace.

The museum in Providence now serves the college of which it is a part, and the community of which it has become a feature, in accordance with the wishes of its founders and supporters. As the school has developed into a professional college, the museum has grown to its present stature with a collection constantly being enriched by the persistent acquisition of antiquities. The Classical galleries display outstanding marble and bronze sculptures, an important collection of Greek vases, and examples of coinage, jewelry and other arts. Rather than set forth a diverse sampling, this article attempts to convey an idea of the depth and quality of the exhibits within the restricted range of Etruscan and Greek metal work and Greek marbles. Several of the objects illustrated have entered the collection in the course of the last few years, and more than one third of them have been obtained within the past decade. These examples also demonstrate the museum's current policy of concentrating on areas already well represented in order to assemble a richer and more significant collection.

As in many museums in the United States, the nucleus of the Classical collection was built up around the turn of the century, and the bulk of the marbles and vases was obtained at that time. Mrs. Gustav Radeke, for whom the gallery of Greek marbles is named, donated or assisted in purchasing almost all the well chosen antiquities which entered the Museum before her death in 1931. Many purchases made since then are the result of Mrs. Radeke's foresight and generosity.

Current exhibition policy is made manifest by the new entrance hall, the Radeke Gallery, which encourages the visitor to look around the moment he is inside. Like a newspaper headline, it not only makes a statement but also invites closer scrutiny. Here the sculpture is placed in the manner of some English country houses, with artfully arranged miniature vistas in every direction. Against a cool blue wall the Greek marbles gain clarity of contour, and the large windows east and west permit them to come alive in the sunlight. More than mere showmanship, the installation represents an attempt to provoke the joy of discovery, so that even the casual passerby will do more than pay these works dutiful respect, and also to give them an arena in which, though displaced from their own time and space, they continue to command attention.

Beyond the brilliant light of the entrance gallery a darkened room contains shadow boxes of varying size and height. Many of the bronzes are shown here. It may seem at first glance as if there were no historical precedent for this sort of display, used in many museums. Actually, however, this is no more than a contemporary version of the eighteenth-century cabinet, a room for the display of precious objects and curios, markedly similar in scale and type to those in museums today.

In this article preference has been given to works ob-

in the Museum of Rhode Island School of Design

tained more recently, as well as to some heretofore unpublished. The Etruscan bronzes illustrated here were selected not only as representative pieces but also to permit an appraisal of the extent of Etruscan prowess in intricate phases of design and technique. In the case of the Greek examples, the best of the bronze figure sculpture has been selected. As for the marbles, the aims have been diverse. Statues or reliefs have been chosen from all periods. The female head contemporary with the Parthenon is almost the only major work of its kind in the Museum. Several specimens of fourth-century figures were selected because, though of good quality, they have never been published. Within the rather extensive geographical spread of the Hellenistic era, the Alexandrian portrait heads constitute an outstanding sequence, stimulating intensive and fruitful study. From those centuries when portraiture had just become widely established as part of the western political, artistic and cultural tradition the Museum presents original evidence of indisputable value.

The illustrations show how the Museum of Rhode Island School of Design is attempting to make its collection meaningful to scholar, student and layman. Their needs are not identical, neither are they mutually exclusive. Whether or not they examine, enjoy, and return to the objects displayed rests in part with museum policies of acquisition and exhibition, but in the last analysis depends upon the works of art themselves.

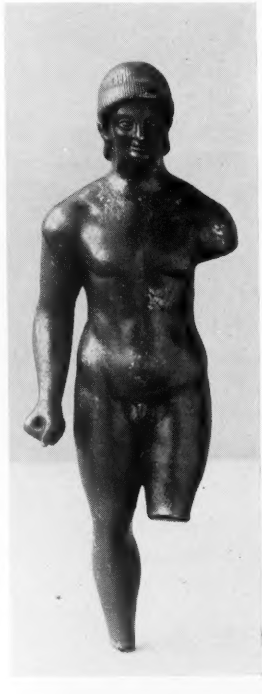
THE AUTHOR is Chairman of the Division of Liberal Arts at Rhode Island School of Design. He studied at Williams College (B.A. 1943), Yale University (M.A. 1947) and Harvard University (Ph.D. 1958). Dr. Brinkerhoff served for three years in the U.S. Army Air Corps; later, he taught at Harvard and at Brown. He has been associated with Rhode Island School of Design since 1952.

BRONZE KOUROS

Greek, late sixth century B.C. "Amphias made this dedication from the tithes to the Far-shooter" (Apollo). So runs the inscription on the legs and thighs of this miniature bronze. A certain rusticity of detail in the modeling goes with its provenience, believed to be the Ptoan sanctuary in Boeotia. Statuettes from this area often make up in vigor and directness for their lack of sophistication, and are just as charming as their more metropolitan relatives. There is an undeniable attraction to contemporary eyes exerted by Archaic sculpture's forthright strength of shape. The figure's interplay between definition by volume and delineation by linear means illustrates succinctly two modes of formal realization often combined in the Archaic period. The absence of a schematic pattern on chest and stomach to describe the male anatomy, indicated instead by the mass of the torso, is a feature of work created toward the end of the sixth century B.C. Height 3⅞ inches. Museum purchase, 1954.

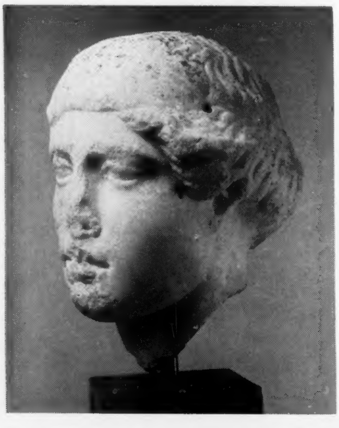
MARBLE KORE

Greek, late sixth century B.C. This maiden is an excellent example of the style of the later Archaic period: she is most at home in the decade from 520 to 510 B.C. The statuette, reputedly found below the Athenian Acropolis, is the only work in the Museum to show the type of dedicatory female image created and refined in the period preceding the Persian wars. The right arm was made separately and set in by means of a long pin. The fabric of the himation, falling in flat folds across the front and caught up by the left hand, still preserves traces of red paint. A long strip of chiton, visible in the center, probably was painted a different color. The uppermost covering bears traces of vertical lines to indicate woolen material. In profile, the statue is rather slim for its breadth, and along the back it is modeled in low, easy, rounded undulations. The hair hung nearly to the level of the elbows; the bulge representing it apparently was made clearer by painting. The coarse textured marble is not Attic but seems to be from one of the islands. Height 11½ inches. Anonymous gift, 1955.



BRONZE KOUROS

Greek, early fifth century B.C. This figure was probably dedicated in the days of the Persian wars. That combination of *hybris* (pride) and *areté* (virtue) which was being formulated when this bronze was cast, appears here as a statement in visual terms of the Greek awareness of the power and the limitations of the human being. This assertion both of self-reliance and of humility, the statuette's most expressive qualities, emerges most clearly when it is seen in frontal view. From this angle, too, the naturalistic rendition of the anatomy may be admired—the attention paid to the gentle bulge of the abdomen and chest, the clear silhouette, whose swellings and contractions reveal the qualities of the human body and imply its potential ability. The smooth, fluid quality appears so easy that we are apt to minimize the amount of subtle creative effort that went into the statuette's making. Cylinder, ellipse and sphere constitute the basic shapes of the various parts of the figure. Whatever object the youth once held in his clenched right hand has disappeared. When the legs were complete, the figure stood with the left leg advanced, betraying a slight stiffness of pose typical of the first decades after 500 B.C. The bronze surface is weathered to a gleaming russet mottled with green. Height 8⅛ inches. Museum purchase, 1925.



FEMALE HEAD

Greek, third quarter of fifth century B.C. This head of Parian marble dates from an important period in which first-rate originals are rare indeed. Since its publication by the previous owner it has been remounted at an upright angle. Present opinion inclines toward believing that it is the head of a goddess from a pedimental complex contemporary with the later decoration of the Parthenon in the 430's B.C. The holes at the sides of the head for the attachment of a metal fillet and those below them at the hair line suggest that the figure originally wore jewelry. The expression, before the eyes and nose became damaged, must have presented an effect of severity and reserved grandeur in conjunction with an inner vitality, like that of some heads on the Parthenon frieze. Finally, the coiffure with its large chignon above the nape can be compared with those of other heads of female divinities from the Periclean age. Over the head some additional adornment, permanent or temporary, could be placed by utilizing a short socket-like hole at the crown, though it is difficult to visualize exactly what was placed there. The surface has not been reworked. Height 10 inches. Museum purchase, 1955.

GRAVE STELE

Greek, mid-fourth century B.C. This memorial relief in Pentelic marble is said to have come from the Kerameikos cemetery in Athens. A monumental stele of this kind was mounted in a frame, probably upon a raised terrace. The breaks in the stone seem to be recent. As an example of the expression of the Greek attitude toward death this sculpture is notable for its communication of mood; the architectonic solidity of the figure radiates serenity and inner strength. It conveys the essence of the ideal of a people whose balanced awareness of the shadowy reality of death and the vibrancy of life is one of the foundations of our humanistic heritage. Dimensions 54 by 24 inches. Purchased 1931 in memory of Eliza Greene Radeke.

GREEK AND ETRUSCAN ART

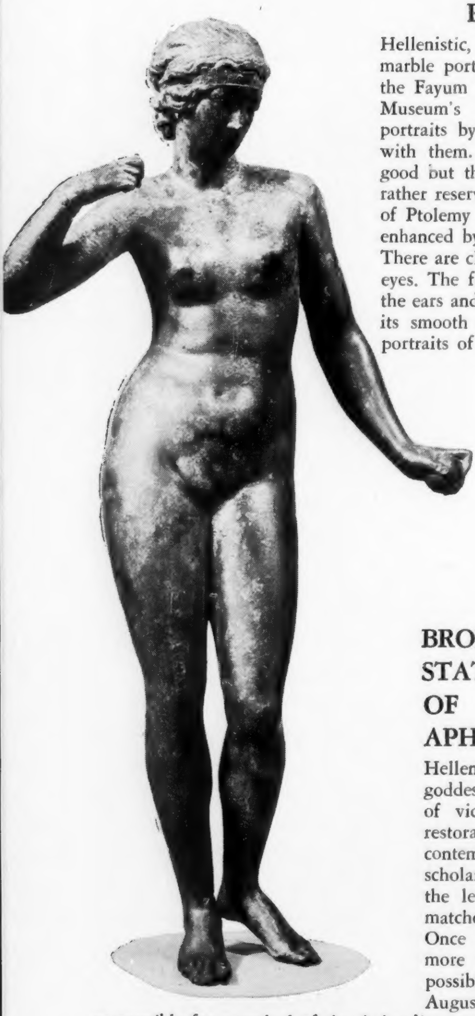
continued

STATUETTE OF A BOY

Greek, third quarter of fourth century B.C. This well known statue, the so-called Bebenberger torso, is probably from the island of Chios. Its style echoes that of two great fourth-century masters, Praxiteles and Lysippus. From the latter is derived the small-scale head, which the elder Pliny noted as a Lysippan innovation. Praxitelean, however, is the slight exaggeration of the torso, bent in an S-curve, which is so unlike the stocky bronze *kouroi* shown above. The entire surface was given a high degree of polish. Although it is known that marble statues were finished by being rubbed with a mixture containing beeswax, it would be difficult to prove that such was done in this case. There are considerable traces of paint on the head. The remarkably translucent effect of the stone was once called Alexandrian *sfumato*, but it is now recognized that this technique was more widespread in the late fourth and third centuries B.C. While the statue ably continues the tradition of the nude male figure in Greek sculpture, its scale, quality and artistic expressiveness forecast Hellenistic style. Height 18 $\frac{13}{16}$ inches. Museum purchase, 1923.

PORTRAIT OF A LADY

Hellenistic, probably third century B.C. This marble portrait is said to have been found in the Fayum area of Egypt. It complements the Museum's collection of Alexandrian royal portraits by furnishing a basis of comparison with them. Not only is the quality equally good but the effect is much warmer than the rather reserved royal style evident in the heads of Ptolemy VI and Arsinoë III. The impression of a lady very much alive, and very Greek, is enhanced by the yellow-brown patina of the Greek marble, which is iridescent in the sunlight. There are clear indications of paint in the hair, and even more in the outline of the pupils of the eyes. The face is finely carved and modeled in planes, as in the treatment of the eyebrows, but the ears and other details are handled in a more cursory fashion. The profile of the forehead and its smooth continuation onto the bridge of the nose emphasize the low brow seen also in portraits of the earlier Ptolemies. Height 12¼ inches. Museum purchase, 1956.

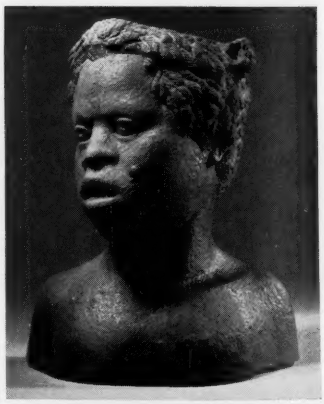


GREEK AND ETRUSCAN ART

continued

BRONZE STATUETTE OF APHRODITE

Hellenistic, late first century B.C. The goddess of love clasps her prized apple of victory, thanks to an imaginative restoration which does not agree with contemporary practice or with modern scholarship. Restored portions include the left forearm, whose pose probably matched the right, and the right foot. Once assigned to the fourth century, more recent appraisals place it later, possibly even in or near the time of Augustus, when Roman patrons were responsible for a revival of the Aphrodite types originated by Praxiteles and his circle. An inlay of silver is still preserved around the eyes and lips, and the decorative effect is enhanced by a bracelet on the right arm and a double fillet binding the hair. In contrast to the positive, straightforward attitude of the Greek *kouroi,* her mood is pensive and withdrawn. Height 18⅜ inches. Purchased from the Reinach Collection, 1926.



HEAD OF PTOLEMY VI

Hellenistic, second quarter of second century B.C. The profile of Egypt's sixth Ptolemy shown on coins has made possible the identification of this head as that of the king who ruled Egypt from 181 to 145 B.C. and also conquered Syria. The features do not seem those of one who has ruled over a quarter century; in the downcast attitude the cares of kingship may be anticipated, but the face is that of a young man. There are obvious fourth-century artistic antecedents, for the technical finish and the pose of withdrawn brooding recall Praxitelean traits. There is a lyric softness given to the translucent island marble which is inherent in the best Alexandrian tradition, while the intense pathos goes with Hellenistic sculpture of the earlier second century B.C. The head, like many of this period, was completed by the addition of a separate piece of stone or stucco. In this case (as generally when the marble was imported) the latter material was employed. Stucco is so quick-drying a medium that the modeling of the hair atop the head was undoubtedly even more impressionistic than that in the marble. The back of the head and neck were chiseled flat, showing that in its original mounting the head formed part of a statue intended for a niche or even placed against a slab in the traditional Egyptian fashion. Height 9⅞ inches. Museum purchase, 1954.

PORTRAIT OF ARSINOË III

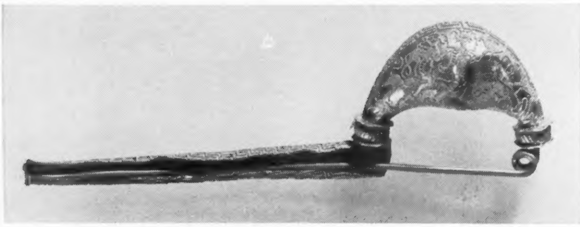
Hellenistic period, late second century B.C. This marble head is an Alexandrian work. As in the portrait of Ptolemy VI, the top was finished by the addition of a separate piece, probably of stucco, attached with dowels, but in this case the back of the head was also completed separately. On two planes converging at the rear, regular tool marks, apparently made by a drill, are still visible. The inner corners of the eyes and the outer corners of the mouth also reveal the use of a drill. The features are so smooth that the expression is detached and serene, and their effect is to recall the grandeur of fifth century work, albeit in a somewhat artificial manner. This sculpture is an example from the first Classical revival, whose most famous masterpiece is doubtless the Venus de Milo. On the basis of other heads and coins an identification as an idealized portrait of Arsinoë III, Queen of Egypt, has been suggested. This kind of Aegean island marble, with visible crystalline structure, was often imported to Alexandria; it is a cool white in its present state, recently cleaned. The head was found in Italy, and although its style is eclectic, the workmanship argues against labeling it an imitation of an earlier masterpiece. Ptolemy V, a son of Arsinoë III, built a temple to honor his mother, and there were statues of her throughout the capital city. The queen mother's glorification came rather belatedly, for Polybius reports she "endured insults and outrages inflicted on her during her whole life." Height 10¼ inches. Gift of Eliza Greene Radeke, 1905.

NEGRO HEAD (left)

Hellenistic, second to first century B.C. The hollow interior of this anthropomorphic container held a cosmetic accessible through a hinged top, now missing. The bust may be an adaptation from a statue created in the third century, when Ptolemy II brought Ethiopia once more under Egyptian control. Although the Negro had been represented earlier in Greek and Egyptian art, works such as this one, in which ethnological type and individual features are smoothly blended, testify to the cosmopolitan nature of the Hellenistic age. This head is one of the extremely rare examples surviving in bronze; the type is commoner in terracotta. Presumably made for sale, it displays a discreet fusion of commercialism and artistry. The circular opening in the hair is one of two fastenings for a handle. Height 7 inches. Gift of Eliza Greene Radeke, 1911.

BRONZE SITULA (right)

Etruscan, sixth century B.C. Here is a commonplace object which has become a work of beauty at the hands of Etruscan craftsmen. The surface of the situla, or bucket, is divided into three principal bands of repoussé decoration, each contributing, by its subject matter and design, to an understanding of these forerunners of the Romans. The uppermost zone reveals a number of people of various ages playing pipes, waving fans, or jovially imbibing from wassail bowls. One pair of athletically inclined youths wield objects resembling dumb-bells in the attitude of boxers. Illustrations of boxers in Roman works reveal their use of similar implements. Note the wine bowl and stand with addorsed birds' heads between the athletes. Like the top band, the center one constitutes a frieze of profile figures. Here, however, all are infantrymen marching to the left around the situla. At the extreme right is the first of four soldiers, presumably auxiliaries, whose helmets are conical rather than pot-bellied in shape. The bottom zone depicts mythical bovine animals with fantastic and varied horns or antlers. The entire situla is made of a single sheet of thin bronze, whose upper and lower edges are rolled around heavy strands of wire. It is one of an extremely rare type, produced perhaps in Bologna, where it was found. Height $10\frac{5}{8}$ inches. Museum purchase, 1932.



GOLD FIBULA

Etruscan, from Vetulonia, mid-seventh century B.C. An ancestor of today's safety pin, this fibula belongs to a group known as the "leech" type. Most of the pin is enclosed in a long sheath; the gathered fabric was inserted beneath a hollow bulbous bow at the end. The whole fibula is richly decorated with granular ornamentation, soldered to the gold background, thus making the fibula a piece of jewelry rather than a mundane object of rich, glittering material. A maeander pattern runs the length of the sheath and frames the scene on the bow. Here is depicted the *Magna Mater* of the Etruscans, a goddess of Oriental derivation, in rigid frontality, with her retinue of mythical beasts and monsters as well as dogs and stags, apparently floating freely in space. Style and composition match the vigor and expansive tendencies of Etruscan life during this period, when Vetulonia was the center of a fine goldsmith industry. Length $3\frac{7}{8}$ inches. Museum purchase, 1930.

STATUETTE OF A WARRIOR

Etruscan, later sixth century B.C. This bronze was made during the period when, through military conquest, the Etruscans dominated the Italian peninsula from the Alps to Campania. The figure thus represents a people at the height of its power, and the martial attitude recalls Etruscan prowess in the art of war. The soldier is depicted striding forcefully forward. The helmet with its huge feathered crest was characteristic of the Etruscan warrior. It enabled his fellow soldiers to distinguish him in the heat of battle and increased the effect of apparent height, making him psychologically more formidable. The armor on this figurine is adorned with incised lines. Originally he held a large shield, and his raised right hand wielded a sword. The slim silhouette of this magnificent little figure, whose seasoned and tough physique is indicated by a wiry tenseness, conveys throughout an impression of heroic invincibility. The purpose of the statuette, placed as a votive offering in a sanctuary, may have been to guarantee in real life the resolute behavior here expressed in effigy. Height $9\frac{1}{2}$ inches. Museum purchase, 1934.

MALE STATUETTE

Etruscan, early fifth century B.C. The model for this small bronze was clearly the Greek style of the late Archaic period, yet the facial proportions and angularity of modeling throughout the whole figure characterize the work as Etruscan. The difference can be observed by comparing this figure with the Greek Boeotian kouros shown on page 151. Chest, thorax and abdomen are stylized in a manner not too closely related to nature. The bodily proportions are fairly accurate except for an oversized head. This last feature gives the statuette its alert air, making articulate what is already expressed through the arms and stiffened feet. Who is represented is not known. It may be the Etruscan Hermes, Turms, bearing the emblems of his divinity. The sharp prominent nose is similar to the wedge-shaped nose of the Etruscan warrior. This figure, however, reveals an indebtedness to the contemporary Greek plastic idiom. The modeling is both more summary and more positive than Greek work, and is worthy of attention on its own account. Height $6\frac{3}{16}$ inches; with ancient base (concealed) $7\frac{3}{8}$ inches. Purchased in memory of Eliza Greene Radeke, 1957.

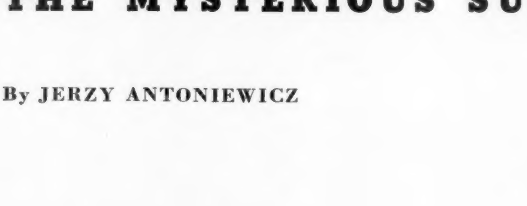
BRONZE CINERARY URN

Etruscan, early fifth century B.C. This vessel for receiving the ashes of the dead is one of a group whose provenience is Capua, though the origin of this particular one is not precisely known. The body and lid are of hammered bronze, while the four winged horses are cast from the same metal. The bulbous outline of this example suggests an early fifth century date, when Etruscan control over Campania had brought native artisans into close contact with the Greek colonists. On the shoulder of the urn appears a simple tongue motif, and the area below is adorned with a palmette and tendril pattern, all very delicately incised. The four winged horses leaping around the cover are of considerable artistic interest, for their necks are blocked out in a geometric, almost angular, manner, while body, legs and tail are more cylindrical. The rim with the horses is detachable, and does not form part of the cover, the handle of which is missing. Height $14\frac{3}{4}$ inches, diameter $13\frac{3}{4}$ inches. Museum purchase, 1930.

One of the Sudovian earthworks, not far from the cemeteries examined. In this area was supposed to be the seat of the Sudovian princes.

THE MYSTERIOUS SUDOVIAN PEOPLE

By JERZY ANTONIEWICZ

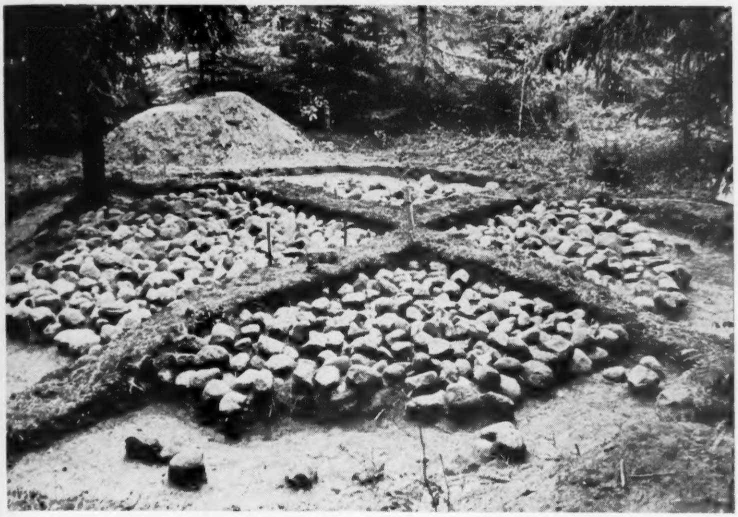


× The ducal burial among many other barrows
The Sudovian tribal territory

Map showing the Sudovian tribal territory in Poland and the Lithuanian S.S.R. (hatched area). A cross marks the site of the fourth-century "ducal" grave.

One of the problems which have fascinated Polish archaeologists since World War II is the question of the Sudovians, the mysterious people about whom many fantastic stories were written in late mediaeval Polish and Ruthenian chronicles. They inhabited the northeastern Polish borderland and belonged to one of many Baltic tribes (the ancestors of the present-day Lithuanians and Letts and of the ancient Prussians) which were exterminated in the thirteenth century by the invading Teutonic Order of Knights. On the east were the Ruthenians, who inhabited the present territory of White Russia. It is a matter of controversy whether the Sudovians belonged to one of the ancient Lithuanian tribes or to one of the many old Prussian tribes. It is presumably these people who are mentioned in the second century of our era by Ptolemy, the geographer (ii.11.15), who calls them *Sudeni*. In the Middle Ages the Sudovians are mentioned for the first time in the year 983 (in the Ruthenian *Chronicle of Nestor*). In 1283 they were almost completely wiped out by the Teutonic Knights. Some of them escaped to Lithuania, then settled in western White Russia, and later were absorbed into the population there.

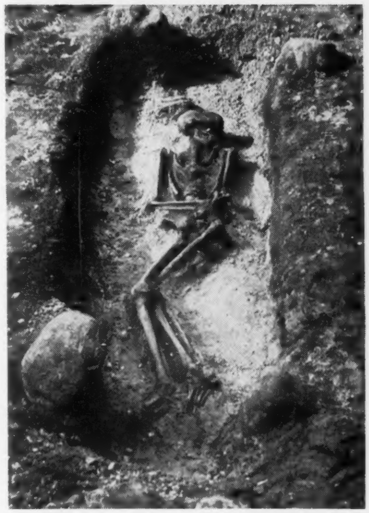
The question is—what was the origin of that brave and warlike Baltic tribe which humbled itself neither before Poland nor Ruthenia, and which was able to oppose the Teutonic Knights for a such a long time? There is also another problem: where should we look for the center of Sudovian settlement? Two important docu-



A **Sudovian barrow** near Szwajcaria. The stone pavement covering the grave pit is visible. The strips of earth have been left by the excavators.

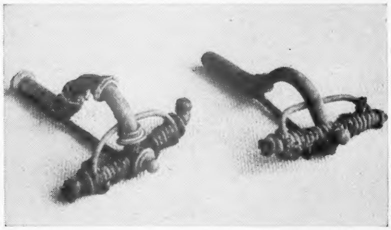
mentary sources for the history of the Sudovians—the Ruthenian *Ipatyevskaya Letopis,* or the *Volhynian Chronicle,* written not long after the last act of the Sudovian tragedy, and the *Chronicon terrae Prussiae,* by Peter Dusburg, the chronicler of the Teutonic Knights—as well as archaeological data obtained thus far provide the solutions to these problems. It is evident that the tribal center of the Sudovians was somewhere in the northeastern part of Poland, not far from the Lithuanian border, near the modern Polish town of Suwałki. Several expeditions have been organized, one in 1955 and four in 1956 and 1957, to explore the region north of Suwałki. In 1957 I paid a visit to the investigators in the Lithuanian S.S.R., who have decided to examine the Lithuanian territory adjacent to the Polish border (see map) in the near future. So we may expect that the Sudovian tribal territory will be subjected to precise examination both in Poland and in the Lithuanian S.S.R. We hope to ascertain the stages of Sudovian social development in the Roman period as well as in the Middle Ages.

What are the results of the Polish excavations so far? It was decided to examine first the territory between the town of Suwałki and the frontier of the U.S.S.R. First, we investigated cemeteries with barrows dating from the third-fifth centuries which we found near Szwajcaria, Zywa Woda, Osowa and Szurpiły. Next, we examined remains of settlements and earthworks located near these cemeteries, which were probably contemporary with them.

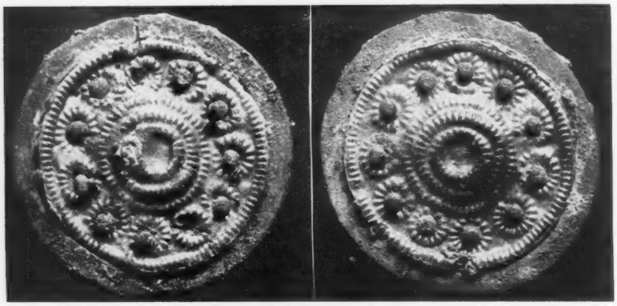


Skeleton of Sudovian woman discovered under the barrow near Szwajcaria.

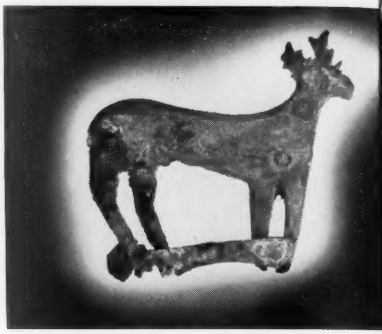
BORN IN 1919, the author served during World War II as a non-commissioned officer in the Polish Artillery. In 1946 he received his master's degree in archaeology from the University of Warsaw. The author has been on the staff of the State Archaeological Museum, Warsaw, since 1945, assisting in its post-war reconstruction. Now Curator of the Iron Age Department, he is especially interested in the archaeology of the Baltic people, and is director of the excavations which he describes for us here.



Fourth-century bronze and silver fibulae, from the ducal grave at Szwajcaria.



Decorated discs of silver and gold, mounted on bronze, from the "duke's" belt. One and one-half times actual size.



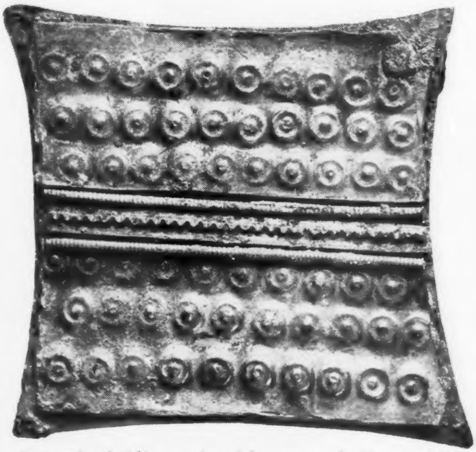
Bronze plaque plated with silver, depicting an elk, from the ducal grave. Shown here in actual size, it served as an ornament for the belt of the deceased.

THE SUDOVIANS *continued*

The density of distribution of the Sudovian cemeteries which date from the Roman period is of great significance. We found a large number of these cemeteries, generally about five kilometers apart. This shows the density of the Sudovian occupation of that territory in the Roman period. Judging by the number of burials in each cemetery, we may assume that the people lived in small villages containing fifteen houses on an average. These were probably fortified settlements, usually situated on uplands, in which lived families related to each other. Their economy was based on farming and stock-breeding (sheep and horned cattle) on a comparatively large scale. Sheep-breeding apparently played an important part in the Sudovian tribal economy, since skulls of sheep are found in the barrow graves along with weapons, ornaments and iron tools. We believe that these skulls were not simply the remains of food placed with the dead, but that they probably had a wider significance connected with traditions concerning the raising of sheep. Sheep must have been important in the economy of this people who lived in these rather barren territories—although once there must have been forests and meadows.

One of the most interesting discoveries was a richly furnished "ducal" grave in a cemetery near the village of Szwajcaria. This fourth century grave was covered with a mound which was larger than usual. It contained the skeleton of a man about fifty-five years old, equipped with all the arms of that period and a bow and arrows besides. A sword in a wooden scabbard, together with a leather belt ornamented with bronze, silver and gold plating and with an animal figurine, was found at his side. A shield partly covered his legs and pelvis. There were also two bits, one with a whole bridle of finely twisted straps and with some parts of bronze and silver. There were also two iron spear heads and a pair of spurs.

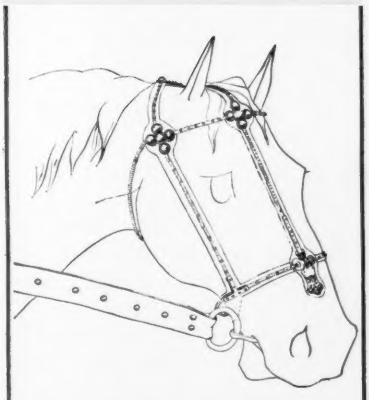
The age of this man differed from that of others buried in this cemetery, for the upper age limit reached by most of them was forty years, and even this was exceptional. Thirty was the average, as attested by anthropological examination. This fact confirms recent views on the special role of tribal elders in primitive societies. This particular individual, buried with rich grave goods in a barrow larger than the others, must have been a highly privileged person, for he was able to reach a relatively



Part of a bridle, made of bronze and silver, which was found in the grave of the Sudovian nobleman. About two-thirds actual size.

advanced age in comparison with his tribesmen buried in the same cemetery. In all probability we have found one of the chiefs of the Sudovian tribe from the fourth century of our era. He must have met a violent death, perhaps during a war expedition, as is shown by the trace of an injury on his skull, probably a sword cut. The low average age of the others buried in the same cemetery may be explained by the hard conditions of life led by the peoples on the Baltic seaboard, and by the epidemics which must have decimated them.

Research on the mysterious Sudovian folk has just begun. As a result of cooperation among the Polish archaeologists working on the problem, there is gradually being revealed a new picture of the Sudovians in the Roman period. But our task does not end here. We want to learn of the social development of the Sudovians from the Roman period to the Middle Ages, to discover the sources of power of that small, brave folk which was able to oppose not only Poles and Ruthenians but also the better-armed knights of western Europe, fighting under the banners of the Teutonic Order. These are, however, plans for the future, which require long years of research.



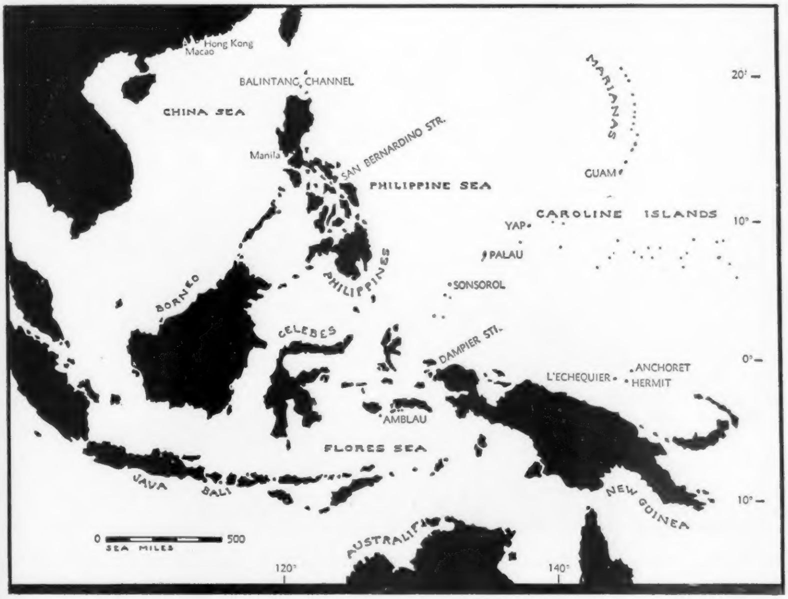
Drawing of a bronze and silver ornament inlaid with violet-colored glass. This was part of a second bridle found in the ducal grave. Drawing below reconstructs second bridle found in the ducal grave, showing position of ornament depicted above.

THE PALAU ISLANDS:

STEPPING STONES INTO THE PACIFIC

By DOUGLAS OSBORNE

THIS ACCOUNT presents some of the results of an intensive archaeological survey of the Palau Islands carried out, from January to June, 1954, by the author, with the assistance of his wife. The trip was financed by grants from the Wenner-Gren Foundation for Anthropological Research, the Tri-Institutional Pacific Program and the University of Washington. Professor Osborne studied at the University of New Mexico and at the University of California in Berkeley (Ph.D., 1951). He has taught at the University of Washington and at Yale University. His numerous publications have been based on field work in several major areas in North America and in Oceania.



Reproduced from *Among the Savages of the South Seas* (page 2), by Captain Alfred Tetens. Courtesy of Stanford University Press and of Anne Harding Spoehr, cartographer.

SOME SIX HUNDRED MILES east of the Philippines begins the region of small islands which we call Micronesia. It stretches a bit more than halfway to Hawaii, lying astride the 10th parallel of north latitude. The gaps between the atolls and fewer high (volcanic) islands of Micronesia are not great; they vary from a few miles to a few hundred miles. As is well known, these far-flung dots of land are now a United States responsibility—the Trust Territory of the Pacific Islands.

The westernmost large island area in Micronesia is called the West Carolines, and the westernmost island group of the West Carolines is Palau. The Talaud Islands and the Sangihe lie to the southwest and lead to Celebes and Halmahera. Directly south of Palau is western New Guinea, while a string of islets, Tobi, Merir, Pulo Ana and Sonsorol, form stepping stones from the large Malaysian islands such as Celebes and from Melanesia (New Guinea) north to the Palaus.

The Palau Islands, then, are well located to have received early and continued influence and migrants from the various parts of Indonesia and from Melanesia. Their location is strategic; they might well have been the first islands occupied by voluntary or involuntary migrants from Malaysia. Here lies their greatest attraction for the archaeologist interested in Micronesian culture history and in the problems of the peopling of the Pacific.

The group includes all three main types of islands: volcanic, coral limestone and atoll. The first are larger and more fertile and will support larger populations than the other two (Babeldaob and Koror are examples).

1. A terraced hill near Ng'emiangel. The entire hill has been terraced. It is now covered with heavy grass.

2. Terraces south of Mdorm, southwestern Babeldaob. This is an excellent example of slope terraces.

The coralline limestone islands are raised sections of ancient coral reef. They may be moderately flat platforms, like parts of Angaur and Pelilieu, or they may be unbelievably sharp and rugged in surface and outline, as are Macharchar and Ngurkthabel. The lovely Kayangel atoll, far to the north of Babeldaob, is typical of many throughout Micronesia.

The peoples of the Marianas and Palaus are culturally and linguistically related. To the archaeologist the presence of megalithic remains and of pottery in both places is of particular interest. The varied large stone objects of the volcanic islands of Palau and the *latte* of Guam and Saipan—large stone columns with hemispherical capitals which functioned as building supports—are outstanding. The megaliths of these islands are by far the best examples of the cutting and carving of stone to be found in Micronesia. Pottery was used only by the peoples of the Marianas, the Palaus and Yap; the rest of Micronesia and nearly all of Polynesia did without.

An interesting feature of the Palauan hillsides is the developed type of terracing which appears throughout the volcanic islands. Furthermore the islanders have long used glass beads and curved sections of large opaque glass rings (gorgets) as money, apparently much as beads were used as valuables throughout many parts of Indonesia. So thoroughly had this "money" become a part of the functioning culture that a Palauan, at least an "upper-crust" Palauan, could not be born, grow up, marry or die without financial transactions involving it. Thus "money," pottery, megaliths and terraces all combine to interest the archaeologist in Palau.

ARGUMENTS CONTINUE among Trust Territory personnel stationed in the Palaus and visitors as to whether the terraces are artificial or natural and what their function may have been—if they were man-made. Christianized natives attribute them to the biblical Flood; authentic aboriginal traditions concerning them appear to be lacking.

There are two main types of terraces: hills and slopes. The former (Figure 1) are spectacular indeed: high laterite hills have been completely sculptured; terraces were cut up their flanks to the final remnant, a sort of truncated pyramid, which I call the crown. Below the crown there is usually a wide terrace sloping in toward it; below this other terraces of irregular width and height, often narrow with high steep risers, lead downward to the foot of the hill. The terraced slopes (Figure 2) are less spectacular. They appear on both steep and gently rising hillsides, but usually they are irregular and do not give evidence of the planning that seems to characterize the more sculptured hills.

Neither rock facings nor constructions adapted for irrigation are found on either type of terrace, nor is there water available on them; structural evidence of habitation is rare. The terraces themselves may have been intended both for agriculture and for defence; today they are virtually deserted and unused. In the Philippines, rice is grown on terraces, but the Palauans are not known to

3. The Rubak Re'ediderong and his wife, the Ma'as Be'eklidil, seated on their house platform, Aimeong, Babeldaob.

5. Paved roadway leading into the southern Koror village of Ngkaisaowal.

4. The house platform in front of the home of the Rubak Re'ediderong and Ma'as Be'eklidil at Aimeong.

THE PALAU ISLANDS

continued

have raised the plant, although it was and is grown on Guam. Taro in many varieties is the major food plant in Palau; sweet potato and sweet manioc, both of New World origin, are now important. A great increase in population would, even today, make mandatory the expansion of taro fields from the swamps to better drained areas. While the taro that is generally cultivated does not grow so rapidly or yield so well in dry as in wet places, it can be and is grown successfully in occasional small patches on the terraces. Very probably one of the varieties was grown there in the ancient past.

The people of Micronesia are known to have been warlike and the Palauans were no exception. The crown of a terraced hill would have been an adequate refuge and defensive position for a field party cut off by raiders, until help could arrive from the village. Other earth-

THE PALAU ISLANDS

continued

6. The Ngarahamai dock (northern Koror) as it appears at low tide. The coastal area is covered with mangroves.

works, all primarily defensive and associated with terraces, were walls and embankments, and deep cuts which the Palauans call "foot-catchers" because of their legendary use in ambuscade.

Stone structures found on these islands include paved roadways, culverts, stairways, house and club-house platforms, wharfs or quays and fresh-water bathing pools. On the volcanic islands these are made of andesite boulders and cobbles; on the coral islands, of coralline limestone slabs. A platform may be placed in front of a dwelling (Figures 3 and 4) or a club-house, or the structure may be placed in the center of the platform. A well drained and relatively dry front yard is thus formed. Paved roads (Figure 5) vary in width from three or four feet to ten or twelve, depending on their closeness to population centers. There is always a line of selected flat stones in the center of the paved way; this is usually the most worn by traffic. Most of the stone piers or wharfs (Figure 6), which made access to a village less dependent on tidal changes, are basically aboriginal, but they have been renovated and enlarged, especially during the Japanese occupation. They are built of the same material and are without benefit of mortar. Whole landing areas, as at Ngerelong in northern Babeldaob, were built with docking and anchoring facilities, so that fine canoe harbors resulted. Causeways over low-lying places were simply built-up roadways.

The huge unshaped monoliths which we know from many parts of Indonesia are not found in the Palaus. Smaller pieces of the local andesite were set upright in the ground and surrounded by other stones, usually flat (Figure 7). These monoliths are from two or three to six or seven feet high above ground level. I saw none that was larger. They are usually found at corners of platforms or at places of ceremonial or social importance in the villages. A unique megalithic development is seen in the fine double rows of stone pillars at Badrul'au in northern Babeldaob. Here large andesite columns, some as tall as eight feet above ground, form two sets of alignments. The columns of the larger double row were notched to receive the long foundation stringers which must have formed the lowest wood elements in a large building. The length-width proportion of both sets of pillars was seven to one. Palau legend has it that no great building was ever reared on these stone columns.

During our survey we located some extremely large

8. *Right:* Carved stone (andesite) head at the mouth of the river below Aimeong. The stone is 21 inches high above ground. Its similarity to the carved heads of Easter Island is more apparent than real.

7. Andesite prism monolith and seat in present setting at Aimeong, Babeldaob.

9. Head carved on stone column near Aimeong, Babeldaob. Height 24 inches.

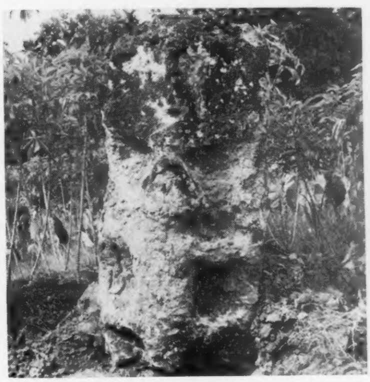
stylized carvings, mostly of human faces (Figure 8). There are at least two types of these faces; one is more realistic and smaller than the other. The best example (Figure 9) of the realistic type is found in western Babeldaob; here the nose, eyes, mouth, hair style and hair line are all delineated. The other carvings, which I call "Great Faces," are usually cruder, with only the eyes now remaining as outstanding features (Figure 10). The gigantic carving at Malikeok, eastern Babeldaob, may well be a complete Great Face (Figure 11). No one knows what sort of Being is represented by either the more realistic carvings or the Great Faces. Modern stories concerning them appear to be nothing more than latter-day rationalizations. On Koror are two carved stelae, each of which appears to represent a crocodile below a human face (Figure 12). At Airai in southeastern Babeldaob is a small pillar with a realistic face carved on each of its four sides (Figure 13). Although most of the stone available for carving on the Palaus is of poor quality, there are a few carvings which are definitely impressive. Better material was offered by the heavy, thick hinge section of the shell of the giant clam, *Tridacna gigas*. The Japanese have collected a number of these pieces; an exceptionally good one is the Ngiwal face (Figure 14).

11. *Right:* The "God of the Village" of Malikeok on the east coast of Babeldaob. This gigantic carving of an unknown being is eight feet eight inches high. As far as I know, the form of the carving is unique in the Palaus.

THE PALAUANS use glass objects as money (Figures 15, 16). These interesting valuables are of two major varieties: curved bar gorgets (triangular in cross-section) and various kinds of beads. Although all are of glass, they differ widely in appearance. Early German ethnologists in the area, Kubary and Krämer, were told that similar objects (these were probably beads) had been found on Yap. Palauan legends speak of the introduction of the money by supernatural means and through shipwrecks in several places on the islands. As the money could only have been introduced into the Palaus and Yap from outside, the distribution to both island groups would seem to indicate that the seamen who brought the pieces came rather often to western Micronesia, possibly on trading expeditions. There was a Malay sailor on the Palaus when the East Indiaman, *Antelope,* was wrecked there in 1783, while a shipwrecked Chinese became an important person on Guam during the late seventeenth century. Altogether, there is no reason to believe that Indonesian, perhaps sometimes Philippine and Chinese,

10. A "Great Face" carving at Bairul'au, in northern Babeldaob. Badly weathered and deteriorated though it is, this giant-eyed being is still impressive. Height about 4 feet.

12. The Ngaramid carving in andesite—an animal form, probably a crocodile, below a human face. Height 6 feet.



13. The four-faced carving at Airai: this small pillar has a face on each of its four sides. Height 19 inches.

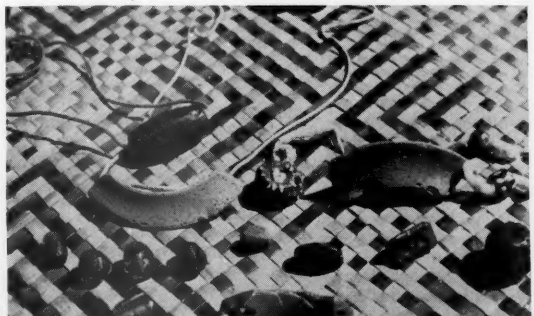
trading or adventuring craft were excessively rare in western Micronesia during the seventeenth and eighteenth centuries. They were probably present many centuries before that as irregular visitors.

The curved ring sections are made of heavy opaque glass in solid colors which range from blues through greens to yellow and orange. All that I have seen have a triangular cross-section (Figure 17), often with concave sides. They are drilled through from the ends to the inner side, so that when worn around the neck they hang in an arc. Only one piece is worn at a time. Some types are decorated with a scroll-and-dot pattern of a different colored enamel or glass. All of these pieces were presumably cut from glass arm-rings. I was unable to collect any of them, but used my outline tracings and photographs as a base to develop the approximate circle of some of the bracelets. The ring section illustrated in Figure 15, left center, is a fine yellow piece, one of the most valuable on the islands; all of the items of this type have individual names, and this one is called *Kdam*. It is in the possession of the Ebedule, or high chief, of Koror. *Kdam* forms an exact quadrant of the original piece, whose inner diameter must have measured $3\frac{3}{16}$ inches. Small faceted beads of the same material are far less rare. Another item, known as *M'u'uer,* is of a dull gray-green glass; it is very large and somewhat abraded. Apparently five and one-half such pieces could have come from the original ring with inner diameter of $3\frac{3}{16}$ inches. The material is opaque; bubble alignment and striations indicate flow. The weights of *Kdam*

14. The Ngiwal face, carved from the hinge section of a giant clam *(Tridacna gigas)*; $9\frac{3}{4}$ inches chin to crown.

THE PALAU ISLANDS

continued

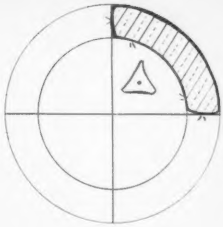


15. Palau glass money. Three curved triangular pieces of colored, opaque bubbly glass, cut from large rings, presumably personal ornaments. They stem from a Philippine Iron Age center or from a related Indonesian-Southeast Asia cultural entity. *Kdam* is left center, *M'u'uer* right center. At the left are beads of green or blue glass, several of them hexagonal bicones, which are common in Indonesia. Between *Kdam* and *M'u'uer* is an *'albu'eb,* a glass crumb or breccia, or crude *millefiori* type of bead. Note that it and other better-made pieces of its type (extreme right) have pieces of lightly twisted cotton cord in them.

and *M'u'uer* are 40.17 and 40.64 grams, and their specific gravities 3.35 and 2.62 respectively. H. O. Beyer has published some evidence that glass was made in the Philippines during the late Iron Age (possibly around the time of Christ) but it is not known whether these large pieces were made there or were imported from elsewhere in Indonesia or Asia.

Hexagonal bicones of cobalt-blue glass are common in the Palaus and in Indonesia where, with other varieties of beads, they are regarded as valuables or money. They have been found among remains of the Han period in China (206 B.C.-A.D. 220). Small striped glass beads such as that in Figure 16 have been found in Sarawak and in Formosa and on the Asian mainland, and may be Chinese. *Millefiori* beads were manufactured in quantity at Roman glassworks in Italy. Such items have been found in China and Java in contexts not later than the fourth and second centuries A.D. respectively. The style originated in the Mediterranean area at least as early as the time of the Ptolemies in Egypt, and beads of this type were traded to or copied in Indonesia or Asia very early in our era. The type illustrated is made of canes of white glass with dark blue centers fused in a dark blue ground mass and is not uncommon in the Indies.

The beads illustrated in Figure 16 (seventh and ninth from left) are two of a number seen in the Palauan islands. They present several problems and are, as far as I could gather, among the most highly valued of the true beads. The type is either a glass crumb bead or a simple form of the impressed glass eye bead. The type is difficult to date without recourse to large collections. Illustrations of similar, if not identical, beads from Europe and Asia date through a wide range. They occur in the early Iron Age of Europe (La Tène I). These breccia or agglomerated glass or encrusted mosaic beads have been made in Egypt since the second millennium B.C.



17. *Kdam* **as it must have formed a section of a large glass ring, probably an arm-ring. The ticks mark openings of biconical holes drilled after the ring was sawed into sections. Note the incurvate sides on cross-section, in center of quadrant.**

Although it is too early, lacking any detailed excavations on these islands, to predict cultural relationships, I am willing to hazard a few guesses. These are that old Palauan culture is strongly rooted in the Philippine Islands Iron Age or in the broader aspect of Indonesian culture of which that was a part. Terraces, Palau money and possibly the earlier pottery would seem to bear this out. A later period must have seen a developing local culture, probably with Melanesian influence. I now feel that the terracing is not Melanesian but that at least the later pottery-making, like many phases of the present culture, was influenced by Melanesia. Another expedition will help us answer some of these problems—and no doubt raise others!

16. Palau money. Strung together are various types of beads. Below the beads is a section of triangular curved gorget of deep blue glass with colored glass scroll-and-dot decoration; fifth from right end of the string is a smaller fragment of the same type. Bottom, a gorget of greenish glass. These three are all sections of arm-rings. The place where these originated has not been determined. Second from the right end of the string is a striped glass bead, possibly Chinese. Seventh and ninth from right are crumb or breccia. Another striped glass bead is shown third from left. Fifth from left is a true *millefiori* bead.

THE LAND-REGISTER

Aerial view of Orange. The outstanding Roman monument is the theater.

One of the most interesting fragments of the register. The 200-*iugera* square of which the property holdings are analyzed below covers most of the fragment and is evidently crossed by a stream, as shown by the double wavy line. The highly abbreviated description of the holdings lies to the right of the vertical dividing line. **The top line** gives the location of the square: DD XIV = d(extra) d(ecumanum) 14, i.e. fourteen squares to the right of the decumanus, the main east-west street; C K XII[X] = c(itra) k(ardinem) 18, i.e. eighteen squares this side of the cardo, the main north-south street. Note that "18" is written not in the manner we are accustomed to, XVIII, but X-IIX, i.e. "10 plus 10-minus-2." **The next line** reads EXT CXIIX S = ext(ributario) 118½, i.e. 118½ *iugera* of the 200 in the square were tax exempt. **The end of line two** and lines three and four read C[OL] XLI S PR A III X* V[I]I S = £ A S SOL. This comes to col(oniae) 41½; pr(aestant) a(sses) 3; (denarii) 7, ½, ¼ plus ½ as; sol(vit), or "The colony retained 41½ *iugera;* the return thereon is 3 *asses* per *iugerum,* total 7 *denarii,* 12½ *asses* (expressed in the Latin as 7 and ½ + ¼ [= ¾] *denarii,* ½ *as*); accounted for." **The last line,** partially broken, reads TRI

* The X second from the right end of line three should properly be written with a short horizontal stroke across the middle: in this case it is not the Latin figure ten but the symbol for *denarius.* Similarly, in line four the character here transcribed by £, the sign for the English pound sterling, should be written without the horizontal stroke.

OF A ROMAN TOWN

By Simone Ribaille-Rogier, Conservator of the Museum of Orange

IN 1949 AN EXCAVATION was started in the center of the city of Orange, in southern France, just a little north of the famous Roman theater. It was a contractor's excavation, not an archaeologist's, specifically for the vaults of a new bank; but its results were of prime archaeological importance. For the workers' spades uncovered "a nest of marbles," as the late Canon Sautel, Director of the XIIIth Archaeological District, described it. There were statues, reliefs, pieces of architectural adornment and, most significant, fragments of an extensive Latin inscription.

The discovery of the inscription was not wholly unexpected: scholars had long realized that somewhere in the city might be buried an important historical document of which only fragments had yet been discovered. A stray bit of the inscription was actually published in 1856 but the piece was lost. Another fragment received careful study toward the end of the century. But these isolated pieces made little sense. It was clear that they had to do with a land survey of the Roman colony (Arausio) out of which Orange has grown, but nothing could be made of the cryptic letters inscribed on the bits. Even Theodor Mommsen, the renowned expert in Roman inscriptions, gave up on them. "We are very far," he wrote, "from having found, not the answer, but the answers, to the riddle. . . . Perhaps the spade will succeed where those of us . . . called scholars must confess to having failed."

More than half a century was to pass before the riddle was solved. It was not until 1949, when many more pieces came to light, that Professor André Piganiol was able to determine that the fragments were part of an immense tablet which gave in miniature a picture of the property holdings of the town, with significant information about each. It was, in a sense, the Roman equivalent in marble of what one finds on ledger sheets in the property record office of any township today.

Actually the fragments, as it turned out, came not from one but from three different inscriptions of the same nature. The best preserved is the so-called "Great Register." It is composed of plaques of very fine white marble varying from 5/8 inch to 2 1/4 inches in thickness. The face bearing the inscription is perfectly polished, while the other is roughly dressed. These plaques, fitted together and carefully finished, formed an immense slab which was fastened to the wall of some government building. The fragments are of varying importance: certain tiny ones pose innumerable problems; others are large enough to permit restoration.

The territory pictured was about fifteen miles wide and twenty-eight long. In the usual Roman practice, derived

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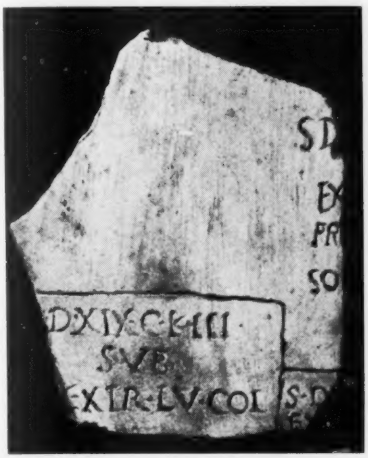
THE DEFINITIVE PUBLICATION of the interesting document described in this article is being prepared by M. André Piganiol, Member of the Institut Français, Honorary Professor at the Collège de France, Director of Antiquities. He has very kindly permitted this article, which has been drawn from his works, to appear in advance of his own publication.

R INC XL = Tri(castinis) r(edditi) inc(ulti) 40, i.e. forty *iugera* of uncultivated land were turned back to the tribe of the Tricastini.

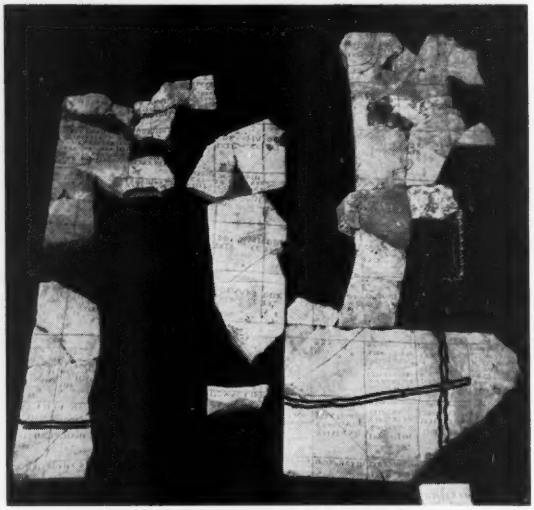
The total number of *iugera* comes to 200:

tax exempt	118 1/2
the colony's	41 1/2
Tricastini	40
	200



Another fragment. As usual, the top line gives the location of the square: [S]D XIX = [s(inistra)] d(ecumanum) 19, i.e. nineteen squares to the right of the decumanus, the main east-west street; C K III = c(itra) k(ardinem) III, i.e. three squares this side of the cardo, the main north-south street. The next line reads SVB = Sub(seciva), i.e. land, often on the periphery, that had been omitted when the original survey was made and hence omitted from the squares originally laid out. This particular bit of land was on the periphery, for there is no square indicated above it. The third line reads EXTR LV = extr(ibutario 55, i.e. 55 *iugera* of the area embraced by the square in question were tax exempt. The COL that follows is an abbreviation of col(oniae), and the lines missing below told how much of the square was reserved for the colony.

THE LAND-REGISTER continued



Like pieces of a jigsaw puzzle many of which are lost, fragments of the register are here fitted together.

ultimately from the Etruscans, two main streets, intersecting at right angles, divided the whole into quarters, the Cardo Maximus running north-south, the Decumanus Maximus running east-west. The scale is such that, on the marble, the former was about 24½ feet long and the latter just under 15. Parallel to each of these, other streets cut the quarters into squares about 780 yards long on each side (scaled down to 4½ to 5 inches on the marble) and embracing 200 *iugera* (300 acres). These squares had been determined by the men who surveyed the land when the colony was actually founded, and they continued thereafter to serve as the reference for property holdings. In a cryptic, almost shorthand system of notation, a mass of information was inscribed in each square. First, its location, indicated by the number of squares it lay away from the main cardo and decumanus and in what direction; then what portion of it was held by tax-free tenants (presumably the heirs of veterans of the legion that had founded the colony), what portion had been restored to the Gallic natives of the region, what portion had been reserved for the use of the colony; and, where appropriate, the rate of return and the total amount of the return.

Terse and compressed and impersonal as these scraps of information are, a graphic picture of the colony arises from them. In the portion of the register that portrays the northeast section, a rocky, hilly stretch, large parcels were given over to the tribe of the Tricastini; the holdings, with few exceptions, are frankly characterized as fallow or covered with forest. The contrast between this area and that opposite, to the southwest, is striking. Here, in the rich and fertile valley of the Rhone, the indications grow more complex. There are still parcels in the hands of the privileged tax-exempt families of veterans, but the rest of the square is not turned back to the natives. Reserved for the colony, these parcels are generally awarded to private individuals; occasionally one person, sometimes two or three partners hold a series of contiguous parcels.

The number of *iugera* occupied by each one, the assessment per *iugerum,* the annual amount of payment which had to be made, inscribed in *denarii*—all this is laboriously drawn up in an almost identical manner throughout, with few exceptions. The parcels of land which were neither reserved nor assigned to private persons and which were on the periphery of the measured land are designated as SVB(seciva). There, the marking of boundaries and centuriation becomes less definite. It seems, nevertheless, that even in this category certain patches had begun to be cultivated, and perhaps these had been unlawfully usurped.

Who was responsible for the survey? Along with the fragments was found a large, impressive inscription carved on an architrave which was obviously meant to crown one of these registers—which one is not certain. This inscription provides the information that it was erected by Vespasian in A.D. 77. It recounts how the town was founded by the II. Gallic legion (probably at the time of the triumvirate, on the initiative of Octavian), how after Nero's death much of the state's property was usurped, and that the emperor has now charged the proconsul, Bassus, with the reestablishment of order and the prevention of a recurrence of illegal occupancy.

And, lastly, actually where is the area covered by the register located? Two factors help to furnish an answer. The first is the importance of water for farming. All streams are carefully indicated on the ledger by wavy lines, and among them the Rhone is easily recognizable by the little islands that dot it on the marble as they still do in reality. The second aid to identification of the area is aerial photography; many pictures have been taken and Professor Piganiol expects shortly to reveal the results. At this point we are sure of at least this much: the fields that Vespasian's officials were dealing with are the same that are tilled today on the left bank of the Rhone, to the north of Orange.

VALDIVIA—
AN EARLY FORMATIVE CULTURE OF ECUADOR

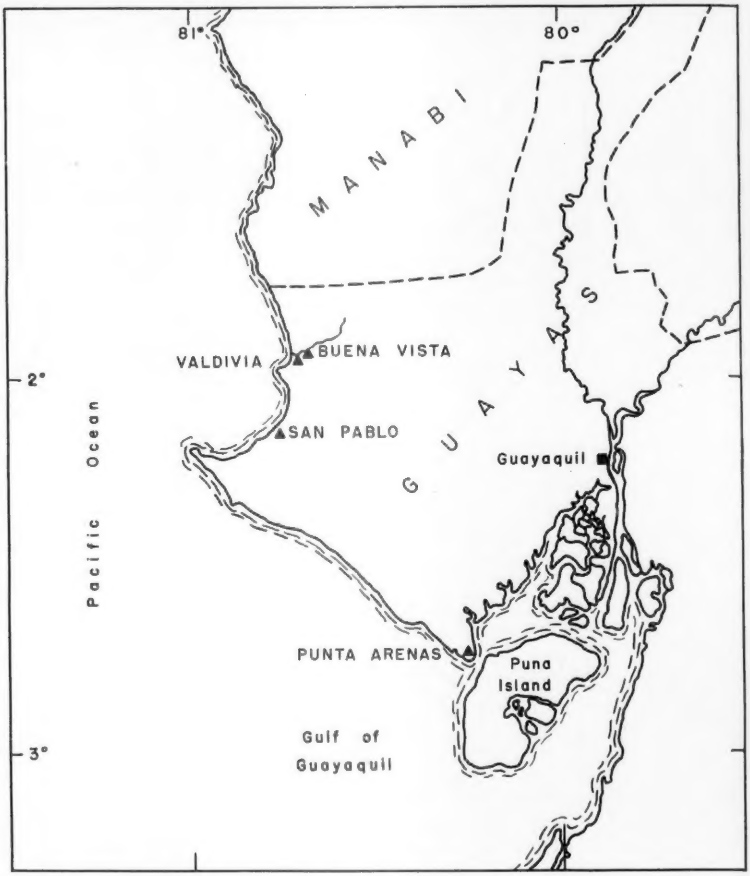
By CLIFFORD EVANS AND BETTY J. MEGGERS

As knowledge of the early pottery-making cultures in the New World has expanded, it has become increasingly evident that widely separated regions were influenced by a common source. Similarities in vessel shape, surface finish and technique of decoration are too close and too complex to be considered independent invention. In the developmental terminology used by American archaeologists, this early period is known as the Formative. Formative period cultures in Middle America and in Peru have been known for many years, and the discovery of new sites constantly expands their description and distribution. However, knowledge is meager in the intervening area, making it difficult to provide satisfactory answers about the nature of the movement involved and the direction in which it went.

Until recently, Ecuador was one of the regions in which Formative period remains had not been reported. In 1954 a deep stratigraphic excavation at Chorrera on the Rio Babahoyo in Guayas province uncovered the first material related to the Formative horizon of Middle America and the contemporary periods (Chavín-Cupisnique and Salinar) of Coastal Peru. Lately the sequence has been pushed back still farther with the discovery of the Valdivia culture, identified as Early Formative.

In May 1956 Emilio Estrada, Director of the Museo Arqueológico "Victor Emilio Estrada" in Guayaquil, found some badly eroded sherds in a shell midden at Punta Arenas de Posorja, on the north shore of the Gulf of Guayaquil. Some of these had polished surfaces and were decorated with excision, zoned cross-hatch, broad-line incision or pebble polishing, traits reminiscent of Formative period ceramics from Peru and Middle America. The identification of the Punta Arenas pottery as Formative was conclusively established in October 1956, when Estrada discovered the site of Valdivia farther north along the coast of Guayas province. The surface of this large site produced quantities of sherds representing all of the Punta Arenas types and several additional ones. Estrada dug two test pits and two deep cuts on the lower flanks of the site. The first cut went to a depth of 4.40 meters and the second to 3.80 meters before virgin soil was encountered. Recognizing the importance of the find, Estrada prepared a preliminary report, *Valdivia: Un Sitio Arqueológico Formativo en la Costa de la Provincia del Guayas, Ecuador.* He summarized the ceramic traits that link this site with the Early Formative of Peru, especially the Guañape culture of the North Coast, and with the Formative in Mexico.

At the end of December 1956 Estrada invited us to excavate further with him at Valdivia in order to deter-



MAP OF GUAYAS PROVINCE, ECUADOR, SHOWING LOCATION OF FOUR SITES OF THE VALDIVIA CULTURE.

Left: Small tetrapod bowl, diameter 13 cm. *Right:* Low, squat stirrup spout, width 9 cm.


Looking north from the Valdivia site, across the modern fishing village of the same name.


Excavating the first site of the Valdivia culture, Punta Arenas, on the Gulf of Guayaquil.


Looking southwest from the Valdivia site across the fishing village of San Pedro. This and the view above show the large bay which offered the early inhabitants a good supply of shell-fish and fish, as it does the modern Ecuadorians.

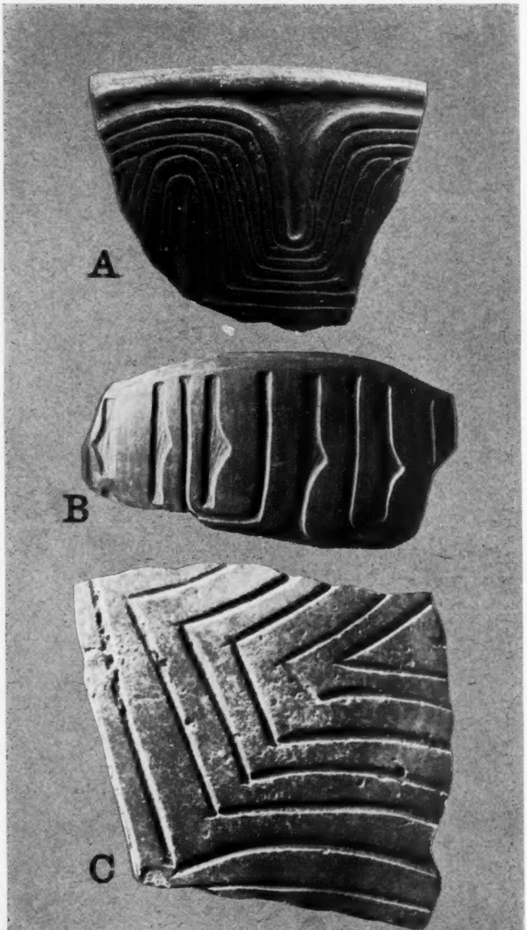
mine the exact limits of the Formative period occupation and to obtain a larger sample of pottery for classification and comparison. In four days of intensive work five additional stratigraphic cuts were completed and a detailed map was made of the site.

In the latter part of 1956 Francisco Huerta Rendon, Carlos Zevallos Menendez and Olaf Holm, all of Guayaquil, discovered another site belonging to this complex near San Pablo, on the coast about twenty miles south of Valdivia. Our own survey of the Valdivia Valley produced a smaller site at Buena Vista, on the left bank of the Valdivia River not far from its mouth. More recently, Estrada has found Valdivia-type figurines in collections from Olón and Guale farther up the Ecuadorian coast. These suggest that concentrated search might reveal additional sites.

All the sites of the Valdivia culture are along the coast. Since the people appear to have derived a large portion of their food supply from shell fishing, it is unlikely that their remains will be found far from the sea. Three of the sites are now a kilometer or more from the shore, but each of these is on the margin of a former salt-water bay that probably formed part of the shore line at the time of occupation.

Valdivia is the largest of the known sites. It occupies a low hill, eleven meters high, projecting from the range forming the south side of the Valdivia River valley, about four hundred meters from the shore. The present village of Valdivia lies to the north, between the site and the mouth of the river. Another small village, San Pedro, is on the shore immediately to the south. The inhabitants of both villages make their living predominantly by fish-

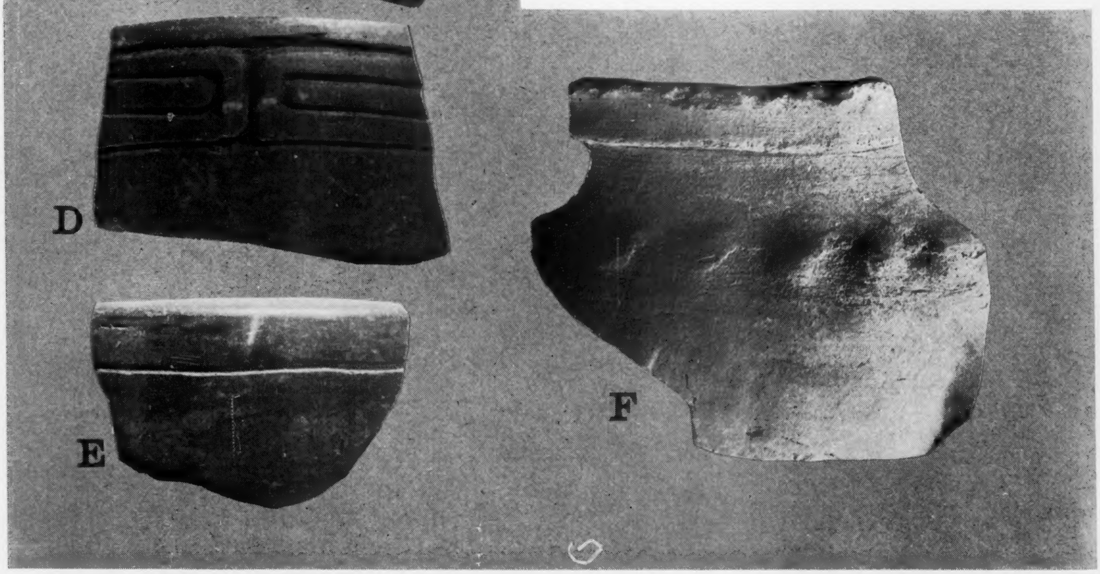
VALDIVIA continued



ing, exploiting an abundance of excellent fish that the ancient Valdivians also drew upon.

Habitation refuse of the Valdivia culture varies from 40 centimeters to 3.40 meters thick. It extends from the base of the hill up and over the summit, and continues part way up the flank of a higher hill behind, covering an area of 160 by 125 meters. The lower third of this deposit is overlaid with refuse of the later Guangala culture. Of the nine test pits in the site, five were in the reoccupied section, while four produced only Valdivia pottery. Fire-cracked stones were found mixed with numerous shells of a dozen different species. Pottery was abundant: four 2 x 2-meter cuts produced more than 26,000 sherds of the Valdivia period. Almost every level produced one or more fragments of small clay figurines.

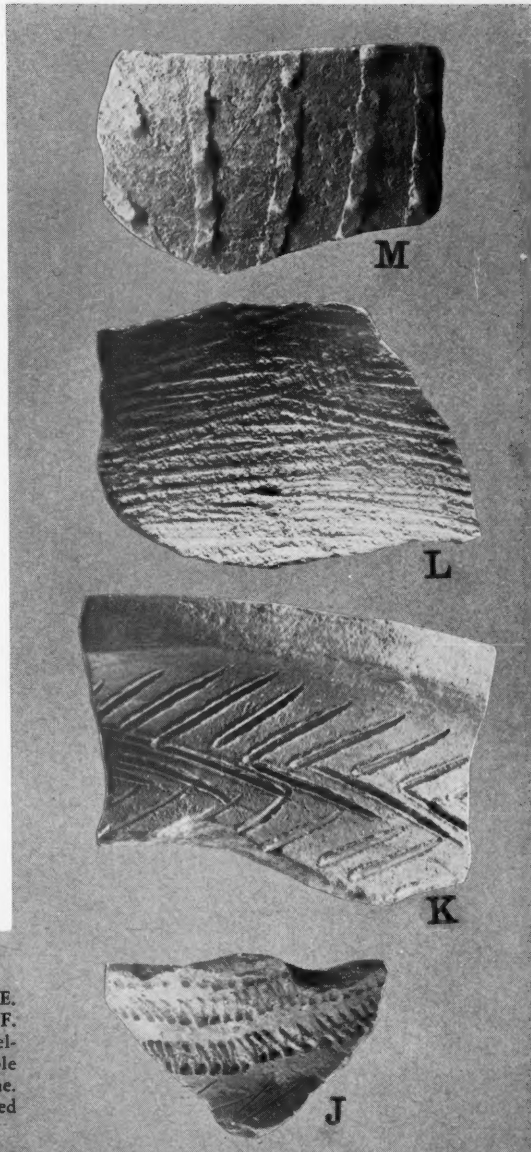
The Valdivia pottery forms a distinctive complex including features typical of the Formative period of both Peru and Middle America. The ware tends to be thick (6-12 mm.) and is tempered with sand. A distinctive characteristic of the paste is the poor mixture of clay and temper particles, so that sand grains are often clustered together, and air pockets or layered regions are frequent. The surfaces of vessels decorated with broad-line incision or excision are well smoothed and polished but sometimes slightly uneven. One of the plain wares has a well polished surface ranging in color from tan to brown to gray-brown to red-brown. Another common type has a pol-



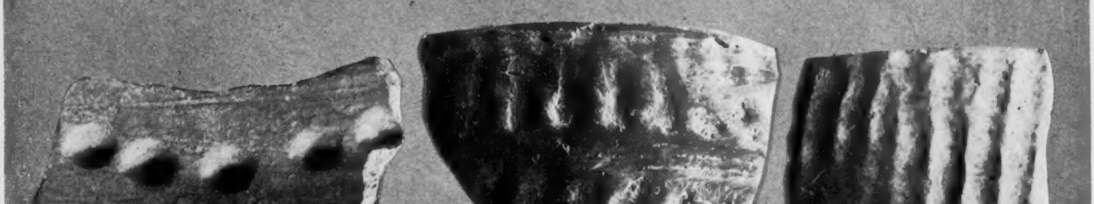
ished red slip covering both surfaces. A polished red slip is sometimes used for decorative effect on the interior of a peculiarly shaped, outflaring, cambered jar neck. Other surfaces tend to be less well smoothed, often only hand-swiped, and are unpolished. Typical vessel shapes include rounded jars curving inward to a constricted mouth and short-necked jars with a rim thickened by a coil added outside and pressed with the fingers to produce a crenelated or wavy lower edge. Four small feet are characteristic, especially on vessels with a red-slipped surface. Stirrup spouts are rare; the two found recently by Estrada are of the squat, stubby type associated with the Formative horizon in Mexico.

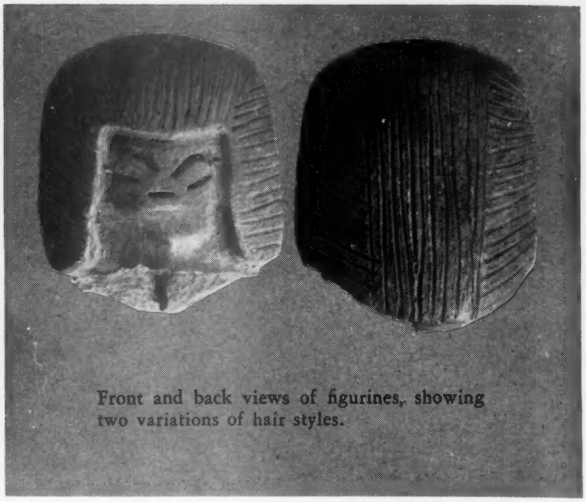
A variety of well defined and consistent decorative techniques was employed, each associated with a different type of design motif. The techniques are broad-line incision on a well polished surface, excision involving large cut-out areas on a polished surface combined with zoned or outlined areas of broad-line incision, rocker-stamping, narrow appliqué fillets with finger-pressed undulations on top, brushing or combing, a row of bumps produced by finger punching on the interior, and pebble polishing varying from barely visible ripples to deep, wide grooves almost like gadroons. A number of the excised and broad-line incised sherds have red pigment in the lines and cuts, added after firing and hence somewhat fugitive.

Pottery figurines of a unique style occur throughout



Various decorative techniques: A,B. Excision. C,D,E. Broad line incision on well polished surfaces. F. Modeling by finger punching (exterior). G. Modeling by finger punching (interior). H,I. Pebble polishing, showing range from crude to well done. J. Rocker stamping. K. Incision on unpolished surface. L. Brushing. M. Appliqué fillets.

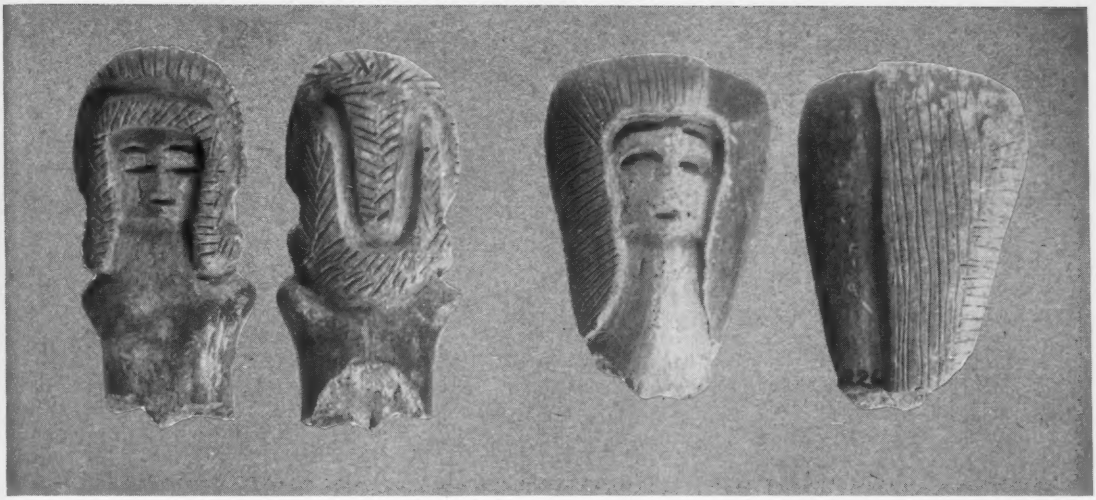




Front and back views of figurines, showing two variations of hair styles.

the refuse. Seventy-six fragments of heads or torsos and a large number of legs were recovered from the Valdivia site. Unfortunately only one figurine is complete. Another lacks only one leg, and several lack both legs. However, since all the legs are much alike, it is possible to give a general description. The body and head are constructed over a foundation of two parallel coils. Over this the face and body features were modeled by the addition of coils, lumps or fillets of clay. Eyebrows, eyes and mouth are indicated by deep gashes. No nose is shown. The hair was apparently added last, when the surface had begun to dry and adhesion was poor, since it frequently has fallen off. Workmanship varies from exceedingly crude to very fine, but no chronological se-

Figurines showing the range from crude, ugly to well made, beautiful specimens.



quence could be determined on this basis. The better figurines have the surface red-slipped and polished to some extent, the finest modeling being associated with the best polished surfaces.

The bodies are standardized. Most of them are female, with prominent rounded breasts. The pubic area is usually smooth, but three have stippling to represent hair and five have a small conical projection the same size as the breasts, suggesting bisexuality. Arms are suggested by an angular shoulder or a slight projection at the shoulder, or are represented as folded below the breasts, or are absent entirely. One exceptional example has the right hand raised to the chin. The back of the body is smooth, with slightly projecting, squared buttocks. Legs are typically straight, separated, bulging in the back just above the knee and tapering to a rounded end with no foot. Five fragments show a bent knee, suggesting a seated position. The only specimens complete from head to toe measure 8.8 cm. and 4.6 cm. The height from shoulder to buttocks on complete torsos varies from 2.0 to 6.3 cm.

The most interesting aspect of this figurine style is the great variety and elaborateness of the coiffures. The hair in all cases stands out around the face, forming a raised frame. The many variations in length of hair and in decoration are shown in the accompanying illustrations. Only rarely is the hair smooth instead of incised. Two heads with the hair arranged in large coils at the sides do not have the fine line incisions, and incision is also lacking on some of the crudest examples. On a few, half of the head is smooth and painted red.

The function of these figurines is uncertain. The most common explanation is that they form part of a fertility cult. However, observations made by Gerardo and Alicia Reichel-Dolmatoff on several Indian tribes of Colombia suggest another possibility:

"One of the main elements in many shamanistic practices of the modern Chocó, Chamí, Emberá, and Cuna Indians of Colombia consists in the use of certain small human figurines. These figurines are made by the shaman, generally of balsa wood, and are carefully painted with vegetable dyes, after which the shaman introduces into them a benevolent spirit. As soon as the figurine has thus been imbued with this power, it becomes a sacred object and is used above all in ceremonies connected with the curing of disease. During these ceremonies at least two anthropomorphic figurines are placed next to the sick person, and it is understood that they act as the shaman's helpers while he tries to cure the patient.

"As soon as the curing ceremony is over the figurines lose all their sacredness and practically no value is attached to them. Often they are discarded immediately, but sometimes they are kept around the house, maybe in a basket, an old box or simply stuck in rows under the thatching of the roof. Broken and discarded specimens can be seen on the trash heap or in the bush near the houses. As curing ceremonials are by far the most frequent exterior expressions of tribal religion and magic, it is clear that in a single household a great many of these figurines will be used in the course of a year, only to be discarded once the ritual is over.

"We are inclined to believe that the anthropomorphic clay figurines of certain prehistoric cultures might have had a similar or identical function, which would explain

their frequent occurrence in midden sites." (Personal communication, May 20, 1957.)

The Valdivia culture has been identified as belonging to the Formative horizon because of ceramic features it shares with Formative cultures of known antiquity in Middle America and Peru. To make a valid comparison, it is necessary to distinguish the initial characteristics of the Valdivia culture.

Stratigraphy indicates that the Valdivia culture can be divided into early and late manifestations. In the early period, the predominant plain ware has coarse temper, and decoration is limited to broad-line incision on polished surfaces, incision on unpolished surfaces, and a type of finger-punching to produce a row of small bumps on the exterior. Plain or polished, red-slipped tetrapod bowls are also characteristic of the early period. At a later time, several additional types of decoration appear. These include excision, punctation, brushing, appliqué fillets and pebble polishing giving a ripply effect. Rocker-stamping occurs in the late period, but the sample is too small to permit the conclusion that it is absent earlier.

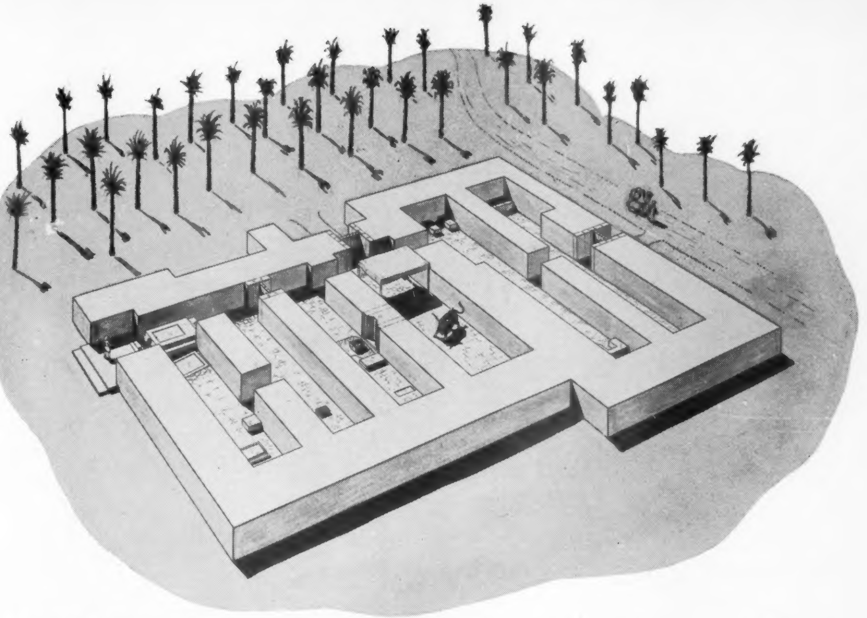
The early Valdivia complex most closely resembles Guañape, the earliest Formative culture on the North Coast of Peru. Carbon 14 dating gives Early Guañape an antiquity of 4300 ± 200 years (shell sample L-122D), or 3100 ± 200 years (carbon sample L-122C). In Colombia the comparable wares come from a shell midden called Barlovento on the Caribbean coast near Cartagena, for which Carbon 14 dates are not yet available. Not far away in Central America the site of Monagrillo (see ARCHAEOLOGY 5 [1952] 173-181), on the Pacific coast of Panama, presents a series of features that have parallels in the early Valdivia complex. These include almost exclusive dependence upon the sea for food, a series of crude stone tools, and a ceramic complex similar in paste characteristics, vessel and rim forms, and decorative technique and motifs. There is no Carbon 14 date for the early culture at Monagrillo.

Jumping into Middle America, we find broad-line incision and polished red-slipped tetrapod bowls among the pottery at Early Formative sites. Excision, characteristic of the later part of the Valdivia sequence, has never been reported from Formative sites in Peru, but occurs in Colombia, Panama and Middle America, and is one of the characteristics of the Tlatilco culture of the Valley of Mexico. Carbon 14 dating from the Tlatilco site is not very satisfactory because charcoal samples collected from various burials and different depths representing the Early to Middle Archaic period were lumped together as sample C-199. This material gave a date of 3407 ± 250 years ago.

There was not sufficient charcoal for dating in any level of the Valdivia site, but tests were made on uneroded shell of a single species from three different levels. The earliest sample (W-631) from Cut A (Level 4.00-4.20 m.) dates 4450 ± 200 years ago, which is the beginning of the Valdivia culture. The next dated sample (W-632) from Cut A (Level 1.20-1.40 m.) is 4190 ± 200 years ago, and the third sample—which by pottery type analysis should be slightly later—is from Cut H (Level 1.30-1.40 m.) and dates 4050 ± 200 years ago.

These dates equate well with the shell dates from Guañape, and tend to substantiate the stratigraphic identification of Valdivia as the earliest pottery-making culture on the coast of Ecuador, possessing a complex of traits characteristic of the Early Formative period in Middle America, Colombia and Peru. Its discovery adds one more stepping stone to the reconstruction of the early paths of migration and diffusion between Middle and South America.

Bodies of some of the figurines.



The Embalming House as it may have looked while in use (view looking southeast). Heavy stone sockets for poles may indicate a sun shelter since the building probably had no roof.

THE EMBALMING HOUSE OF THE APIS BULLS

By JOHN DIMICK

On a flat dusty plain in the ancient Egyptian city of Memphis rest the remains of a unique building, the Embalming House of the Apis bulls. There a palace of limestone was erected and furnished with tables of alabaster weighing as much as fifty tons. It was dedicated to the preservation of the carcass of Apis, sacred bull of Memphis, whose soul was supposed to be the image of the god Osiris. Osiris, whose name means "Many-eyed," was one of the important gods of Egyptian mythology. He was Judge of the Dead, Ruler of the Kingdom of Ghosts, God of the Nile and Constant Foe of Evil. He also represented the setting sun.

In olden days the cattle of Egypt were fat, beautiful creatures of varying colors and shades. The rarest were those whose backs and sides were black, with regular stripes of a lighter color on the belly and legs. Such a bull was in high esteem, and it is probable that the bull Apis was so marked. He had a triangular white blaze on his forehead. His horns swept out and upward to perfectly matched points. He was a handsome creature, a blue ribbon winner in any competition. Plutarch thrilled his readers by describing Apis as "born of a ray darting from the moon on his mother who, after his birth, never brought forth again. On his shoulders was the resemblance of an eagle, the mark of a scarab on his tongue, and the hairs on his tail were double." No doubt very general resemblances to any or all of these markings were sufficient to satisfy the credulity of his worshipers.

Although the bull Apis could not live forever, his soul would live on, providing his body were properly preserved. Therefore the creatures of this fabulous animal dynasty were preserved and buried with all the ritualistic fervor given the pharaohs. In 1851 the famous French Egyptologist, Mariette, discovered their burial place (the Serapeum) high on the desert plateau at Sakkara. Within that enormous excavation are huge sarcophagi carved out of granite or limestone. Each at one time contained the carefully embalmed remains of a deceased Apis. All of these great tombs were long ago opened and rifled, but they remain there in their underground resting places,

their huge stone lids pushed back, the inscriptions which identify them still legible, telling of the dynasty in which each bull was born, lived and died.

Even before his death, according to Greek historians, Apis' successor had been chosen. Once chosen, the sacred calf was fed on milk for four months, in a house facing the east. At the end of this time, at the new moon, he was transferred to Memphis in a boat bearing a gilded house, amidst the rejoicings of the people. Authorities differ on whether or not the young Apis lived in the same palace with the old one during the last months of his life. We read of a hall being built for Apis, adjoining the temple of Ptah, the chief deity of Memphis. There were two chambers and in front a magnificent court. The bull's food was selected with the greatest care, and lest in his state of confinement he should grow too fat, he was never given the rich water of the Nile to drink.

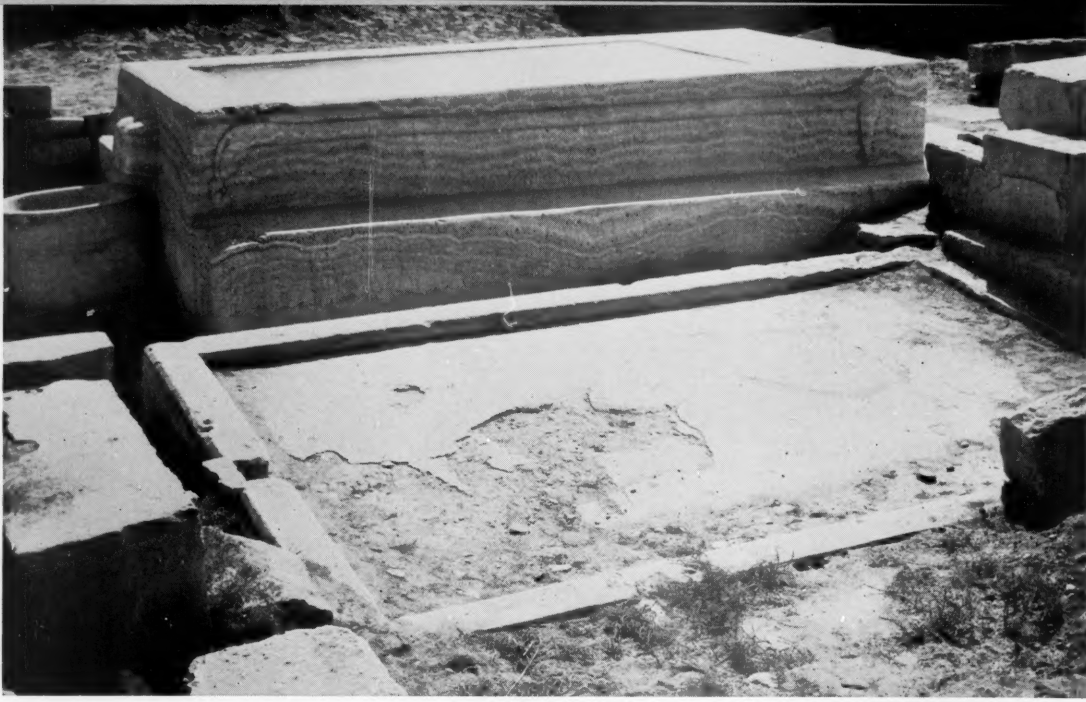
Apis was seldom exposed to the view of curious strangers but only exhibited on solemn festivals when he was led through the city in procession. It was a good omen if he took food readily from those who offered it to him, but evil if he refused it. Public prosperity or calamity was portended by his entering one or the other of his two special apartments. Children vied with each other to have his breath blow upon them and thus receive a gift of prophecy. Those who consulted him for guidance kept their ears closed until they had left the vicinity of the temple, and the first words they heard when they opened them again contained the answer of the god to their inquiry.

Apis' death was a time of general mourning, his interment a costly affair. Superstition reached such heights that the magnificence of the ceremonies proved ruinous to the people. During the reign of the first Ptolemy, for example, all the money appropriated for Apis' funeral was expended, and the people then went heavily in debt to Ptolemy in order to provide additional demonstrations. The Embalming House was a tremendously expensive building, as were its furnishings. It probably contained also the living quarters of Apis and fronted upon an open grazing and exercise area for the bull. The Greek historian Herodotus, writing (ii.153) of his adventures in Egypt in the fifth century B.C., spoke of Psamtik I (663-609 B.C.) who, "having made himself master of all Egypt . . . built a court for Apis, in which he is fed whenever he appears." Herodotus also described the court as surrounded by a colonnade supported by statues instead of pillars, and full of sculptured figures.

Not until 1941 was a clue found to the actual position of the Embalming House, although fifty years earlier its general location had been surmised. During the lean years of World War II it was understandably difficult to find money for digging. Practically all archaeologists folded their equipment for the duration; they found their excitement in the service of their countries. However, Dr. Ahmad Badawy, one of Egypt's fine historians, did have a small appropriation which he would doubtless have lost had he not used it at once, and he chose to use it for digging in old Memphis. These limited funds were exhausted in less than two months, but in that time he uncovered a sizable part of the floor plan of the Embalming House. Almost a half century before, Sir Flinders Petrie had found the building but his digging was negligible and his report inconclusive. When, in 1954, our expedition arrived at a site near the Embalming House, I decided to excavate further in the hope of forming some tenable conclusions about the building and what had gone on within it.

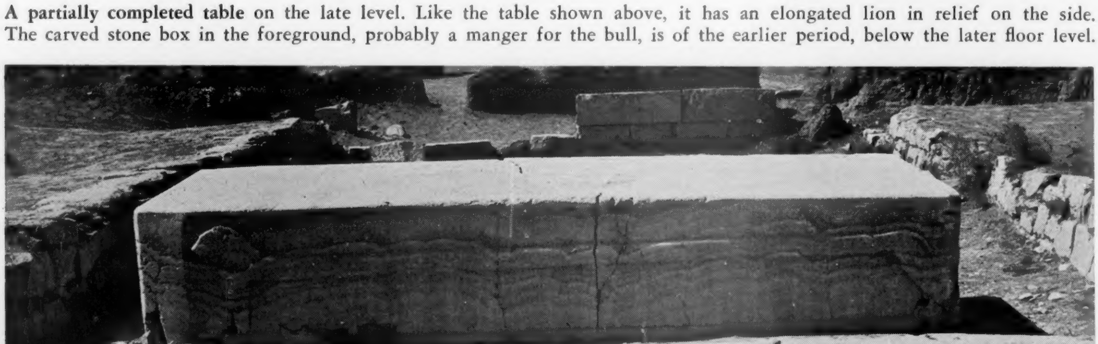
WHAT COULD WE LEARN about this badly damaged ruin? Century after century had seen stone robbers depleting walls and furnishings until practically nothing remained. Successive dammings of the Nile and consequent increases in the water level added to the destruction. History was of little help except in providing fascinating legends and mythology. The meager theories concerning the building, its shape and function, were based only upon the superficial digging we have described. We set out, therefore, to substantiate or to controvert those theories by further digging.

Left: View across the destroyed north end of the Embalming House. In the foreground lie the remains of an early embalming table. Three sets of cleavage marks and one complete break can be seen. Cleavage was accomplished by driving wedges into spaced holes. Just beyond is a beautiful block of alabaster, all that remains of a table, three-fourths of which has been carried away. In the background is the table shown in the next picture.



An embalming table, the one complete example remaining. The block is almost eighteen feet long and nine feet wide; its full thickness is over four feet. At extreme left is the circular basin into which the body fluids drained. The discarded table in the foreground had been pushed aside to make room for the new one, and a raised pavement covered the old level.

A partially completed table on the late level. Like the table shown above, it has an elongated lion in relief on the side. The carved stone box in the foreground, probably a manger for the bull, is of the earlier period, below the later floor level.



APIS BULLS continued

The stone palace where Apis lived, died and was embalmed lay within the walls of the massive temple of Ptah. Those temple walls were bastions of earth, thirty feet or more at the base and of indeterminate height. Today little remains of them. The southern wall of the Embalming House now touches the winding, dusty road connecting the main north-south highway with the desert. Along this road the Egyptian farmer leads his donkey or camel much as he did twenty-five hundred years ago when the building was standing. In its entirety the Embalming House was a rectangle approximately two hundred by one hundred feet, probably not roofed. The exterior walls were lined inside and out with cut limestone blocks, and then filled with either rubble or adobe bricks. The northern, better preserved half contains most of the remaining evidence; the southern half seems to have been heavily plundered for building stone. Long rooms, separated by thick walls and paved with stones of irregular shapes averaging seven inches in thickness, crossed the building. Heavy stone frames held wooden doors hinged on extensions of their inner edges which fitted into sockets cut into the stone floor. Two rooms containing troughs and manger-like stone vessels are connected by a massive stone door jamb. These may well have been the rooms into which the capricious bull wandered and thus foretold good or evil.

Evidence points to a costly refurnishing program late in the fifth century B.C. Probably the earlier level had been abandoned as the water table rose, and a higher, drier level was imposed upon the earlier one. The great alabaster embalming table in the northeast corner was placed almost exactly where the earlier and less ornate one of limestone had been, except that it was several feet higher. The first table was pushed aside, and it now lies worn, cracked and out of plumb beside its successor. One old embalming table in the northwest corner of the building was crudely cleaved by later stone hunters but its pieces were unused (see illustration on page 184).

The one embalming table which had been completed and which also survived the later foraging for stone is a single block of alabaster, masterfully rendered. Along each side is an elongated lion in high relief. On the top is a shallow recess which gradually deepens towards the drain. Here the body fluids were caught and drained off into an alabaster basin. The weight of the block is conservatively estimated at fifty tons. It is another example of the weight-handling genius of the Egyptians, who transported it from the distant quarries near Amarna. Unfortunately, the table bears no inscription. After thousands of years under desert sands no stains or other traces of its actual use remain. However, the older table beside it shows positive signs of having been scraped and cleaned. Two additional tables much like the finished one of alabaster were within the Embalming House but were not adorned, good proof that final sculpturing must have been done after the stones were put in place.

"APIS IS DEAD! Long live the new Apis!" Some such cry no doubt arose upon the announcement of the bull's death. Preparations for the embalming began immediately. The dead Apis was carried from his quarters into an embalming section, let us say in the northeast corner of the building, where he was placed upon the embalming table. We may presume that the head was placed at the south and the four feet upward to expose the body properly for removal of all the organs. Good embalming tactics required that as the first step. Cleaned and ready for mummification, he much resembled the carcass of any fat Angus hanging in the ice box today at your favorite butcher's. The bull's body, like the human, contains about 75 per cent water by weight and, as in the case of the pharaohs, it was necessary first to deplete it of all body fluids, most of which would have drained into the large drum-like alabaster basin at the head of the table. Once cleaned, the carcass was then ready for careful preservation and purification. Most important in the process was the drying. The useful Egyptian sun helped greatly, but it was too slow to be relied upon alone. The absorbent materials easily available in Egypt were lime and salt. No positive proof of the use of lime as an embalming agent has been found, but the use of salt is suggested

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JOHN DIMICK was Director of the University of Pennsylvania Museum's expedition to Memphis during 1954-55. While there he surveyed the remains of that ancient Egyptian capital and made a new map of it—the first entirely new one in over a hundred years. His more technical report on the Embalming House of the Apis Bulls will soon appear as a part of the Museum's publication of the entire project.

On the face of this stone of unknown purpose found within the Embalming House is an inscription containing the name of the Pharaoh Sheshonk I. The god Anubis and a high priest of Ptah are performing a funerary ceremony called "Opening of the Mouth." The inscription also tells of the king's order to build a purification hall "for his father, the Osiris-Apis."

by good authorities. Certainly some agent was used for an immersion bath, and salt is acceptable. The carcass was then swabbed out with strong salt solution preparatory to packing. Packing was another step in assuring dryness. Such materials as resin, wood pitch or sawdust were packed into the cavities, including the brain cavity. Cotton rags soaked in resin were used for stuffing, and costly spices, such as myrrh and cassia, and aromatic ingredients were placed in the cavity before the final sewing. Then the bull was ready for wrapping. Continuous layers of cloth dipped in liquid resin completed the mummification. How long the embalming required is not known, probably several days. Finally the mummy was placed upon a heavy cart with great wooden wheels, and amid processional splendor was carried high onto the desert plateau to the magnificent Serapeum, burial place of the Apis bulls, where a sarcophagus awaited it. A youthful successor grazed in unmindful peace and prepared to accustom himself to his life of luxury. The date of the bull's birth was recorded exactly, as was that of his death. Occasionally the otherwise uncertain dating of a pharaoh has been established by reference to the history of Apis and the bull's age when the pharaoh succeeded to the throne.

WITHIN THE WALLS of the Embalming House a few inscriptions remain which go far to prove its purpose. One inscription (illustrated here) shows Anubis, God of the Dead, and a high priest of Ptah named Shed-su-Nefertem. They are performing ceremonial acts for Osiris-Apis, whose name is flanked by cartouches of Sheshonk I (Dynasty XXII). Jackal-headed Anubis (at left) pours a libation from a tall jar, while Shed-su-Nefertem performs a funerary ceremony called "Opening of the Mouth." On either side of this central group is a single row of hieroglyphs which reads: "It was ordered by the great leader of craftsmen, the *sem*-priest Shed-su-Nefertem by His Majesty to cause to be built a *wabet*-house (purification hall) for his father, the Osiris-Apis, as an excellent work." On another face of the same group of stones are two cartouches of Rameses II (Dynasty XIX), and to the left of those names is a worn inscription in which the name of Apis can be read.

On the remains of an alabaster block in the northwest corner of the Embalming House an inscription proclaims that Amasis (568-525 B.C.) prepared for "his father, the living Apis" a block of alabaster of Hatnub (the well known alabaster quarry near Amarna). Above are the names of articles used in the funerary ritual and the embalming. The fact that Apis was embalmed is best established by some of the Apis stelae found in the vault of the Serapeum. "The sacred corpse was embalmed with spices and the cere-cloths were of byssus, the fabric most becoming for all the gods." There are numerous references to the elaborate burial ceremonies and to the costly sarcophagi. One stela says in part: ". . . Under the reign of Amasis, who bestows life forever, the god Apis was carried in peace to the good region of the west. His interment in the netherworld was accomplished in the place which His Majesty had prepared. Never had the like been done since early times, after they had fulfilled for him all that is customary in the halls of purification."

Apis was worshiped with fluctuating fanaticism from the Second Dynasty until well into the Ptolemaic period —more than two thousand years. It is frustrating that no other building in all the land can be identified as having served the same purpose as this one. The long period during which Apis was worshiped greatly overlaps the estimated period when his embalming occurred. Judging from the earliest date we have, we can say only that the practice of embalming Apis bulls had begun during Dynasty XIX, more precisely about 1300 B.C. The latest mention of Apis which could imply his "purification" dates from the reign of Nectanebo in Dynasty XXX, about 370 B.C. There is some speculation that the ritual may have continued into the early Ptolemaic period. In any case a thousand years is a moderate conjecture. It is unfortunate that more data cannot be recovered having to do with the Embalming House and the Serapeum, since they were so clearly associated. One strong argument for their relationship is that Rameses II, whose cartouche is found in the Embalming House, constantly strove to promote the worship of Apis, and his constructions did include the Serapeum. Countless questions concerning the adventures of Apis and his life and death are still unanswered, but the combination of fact and surmise provides a plausible account. What actually took place may remain forever buried in the sands of the desert.

A ROYAL VIKING BURIAL

By THORLEIF SJØVOLD

VIKING SHIPS are familiar to everyone, at least as far as their general appearance goes, but the basis for our knowledge of these ships—the actual vessels discovered in Norway within the last century—may not be so widely known. In the introduction to his guide book, *The Oseberg Find* (Oslo 1957), the author says: "The Viking ship finds are the fairy tale of Norwegian archaeology, and like . . . a fairy tale they are almost too good to be true. . . . Just as the great events in fairy tales . . . are repeated, generally three times, always larger and more imposing each time, so has been the case with the Viking ship finds. First the Tune ship was discovered in 1867, then came the Gokstad ship in 1880, and finally, as the climax, the Oseberg find in 1904."

Those fortunate enough to travel to Oslo can now see these three great ships under one roof, in The Viking Ship House at Bygdøy, outside Oslo. To whet the appetite of those who may visit the museum, and to give a glimpse of its contents to those who cannot, we present portions of Thorleif Sjøvold's book.

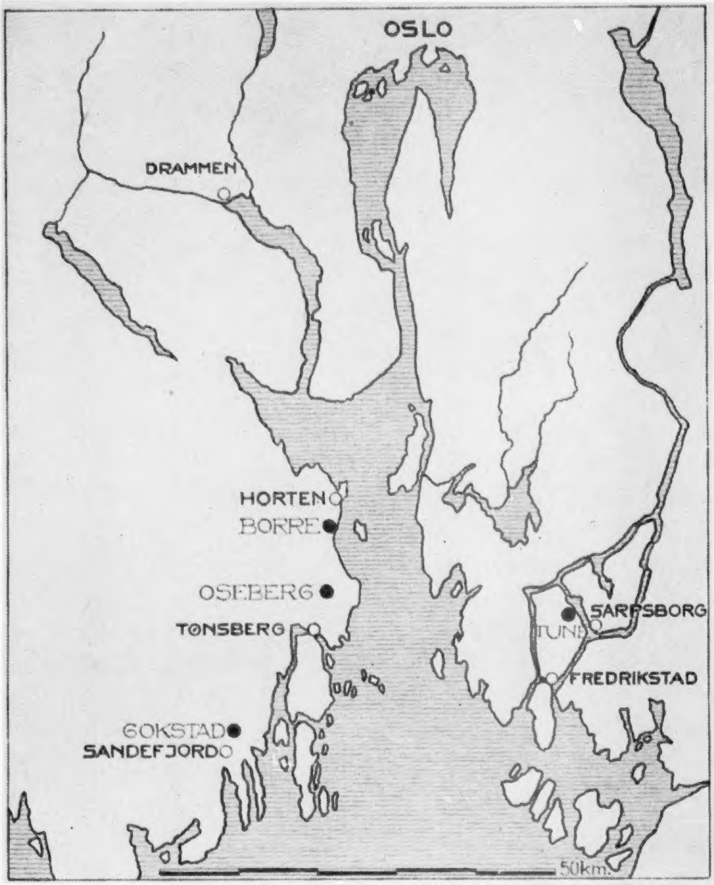
The Oseberg ship as it was found. Here the entire ship is exposed; the burial chamber, which was built on the after part of the deck, and all the equipment, most of which was found in the fore part, have been removed. Photo Vaering.

The stern of the Oseberg ship seen from the port side, before it was removed from the mound. The beautiful wood-carving is clearly seen. Photo Vaering.

GREAT MEN OF THE VIKING AGE were sometimes buried in ships, and it is partly to this custom that we owe the preservation of vessels from such ancient times. Ships of the same or similar type were certainly built and used almost all over Scandinavia, but ships are short-lived by archaeological standards, and particularly favorable circumstances are necessary to preserve them. Another factor affecting the preservation of wood and other organic materials is the composition of the soil. In the area around the outer Oslo Fjord the soil is a blue clay which has made it possible to find these materials in excellent condition.

The fact that we have no less than three well preserved ships from Viking times enables us to draw general conclusions about ship-building in that period. In addition we have the rich equipment of the Oseberg ship, including objects relating to everyday life as well as productions of the highest quality in wood-carving and textiles, so that through this find we have gained a greater insight into the daily life and the arts and crafts of the period than we could ever have dreamed of.

The excavation of the Oseberg find took place during the summer of 1904 on the Oseberg farm at Slagen, not far from Tønsberg. A very large grave mound, 145 feet in diameter and 19 feet high, covered the ship and the burial chamber; the subsoil had subsided, however, so that when excavation began the mound was only about eight feet high. The soil here consists of clay, but the mound itself was built of an enormous number of peat sods, packed tightly together with the grass side up. The



SKETCH MAP OF THE OSLO FJORD DISTRICT SHOWING THE SITES OF SEVERAL VIKING SHIP FINDS.

A VIKING BURIAL continued

mound thus formed a fairly compact, airtight cover over the ship and all its contents. This, together with the blue clay in the subsoil, resulted in the remarkable preservation for more than a thousand years of all the objects made of organic materials.

The ship and its contents, however, did not remain undisturbed. At some time or other, probably in the early Middle Ages, robbers broke into the mound, hewed a hole in the bow of the ship, and made their way to the burial chamber. The grave had thus been seriously disturbed. The ship itself was also in a sad state when it was excavated. At the time of the burial it had been filled with stones, and the weight of these, together with that of the mound itself and of other stones piled up around the ship, resulted in considerable sinking of the ground. As a result the ship was broken up into thousands of small fragments which had to be taken up one by one and later laboriously put together.

Most of the rich equipment which had been buried with the dead was found in the forepart of the ship. There were a great number of ship's accessories: oars, a gangway, a bailing vessel, tubs, pails and so forth. Here, too, were found a richly decorated cart, three beautiful sleighs and a work sled, together with three finely carved sleigh shafts. Three beds and two tents were included in the equipment, and, finally, the skeletons of at least ten horses. Skeletons of some horses and an ox were also found just beside the ship, and another ox skeleton lay

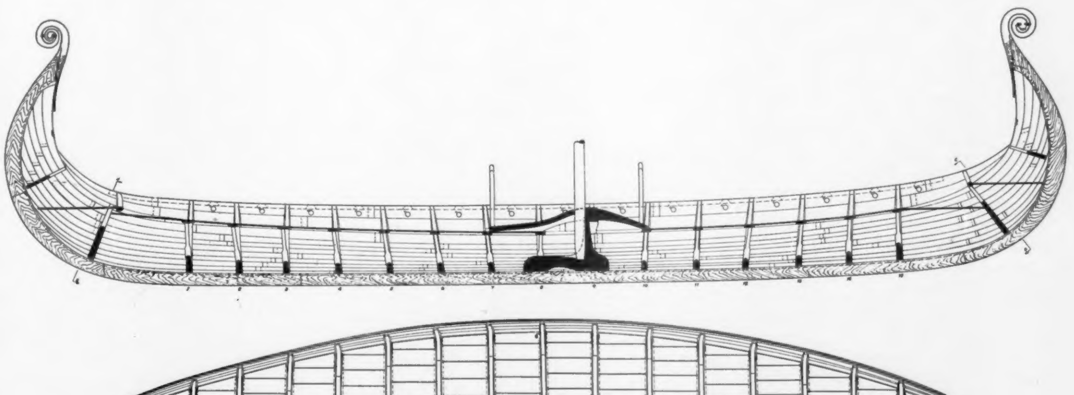
astern, outside the burial chamber. Kitchen utensils were also found here. In the entrance made by the robbers were found remains of human skeletons which show that two women were buried on the ship; they doubtless lay on beds in the burial chamber, and the quantities of textile remnants, down and feathers which were found must have made up the bed clothes and the hangings of the chamber.

Some of the personal possessions of the dead were also found in the chamber: implements for textile work, chests, buckets and four beautifully carved posts terminating in animal heads. Since there was no jewelry we must conclude that it was carried off by the robbers, for personal jewelry was an integral part of the equipment of a Viking woman's grave.

THE OSEBERG SHIP is a large, open boat, entirely of oak, which was designed and equipped both for rowing and sailing. Its full length was about 71 feet, and it was nearly 17 feet wide at its broadest part; amidships the depth from gunnel to keel was 5 feet, 2 inches. With a crew of thirty-five men and the necessary equipment, the ship's displacement has been calculated at eleven tons. This is a smaller vessel than the regular Viking long ships, and it must have belonged to a group described in the sagas as "karvi"—small vessels used by chieftains for cruising along the coast. The Oseberg ship is clearly a pleasure vessel—almost what we would describe as a yacht—for use in good weather on closed waters. The intricate construction of the ship can be seen in the plan and section on this page; the elaborate carving on it is of a high quality and shows that much importance was attached to giving the vessel an impressive and graceful appearance. This was attained primarily by the strikingly high bow and stern, and the very fine carved decoration of these portions.

The ship's mast, of pine, was nearly 19 feet high when excavated, but it was probably more than twice this length originally. There was no trace of the sail, and we know only that it was large and square. All fifteen pairs of oars were found; these were not the ship's original oars but were specially made for the burial. They are beautifully fashioned and several bear traces of painted designs. None of them shows any signs of wear; several were not even completed. All are made of pine and they average about 12 feet in length, the length being adjusted according to the distance between the oar holes and the surface of the water; this was greater at the bow and stern than amidships. The oar holes are placed rather low over the floor boards, showing that the crew sat while rowing. There were no thwarts or fixed benches; the rowers probably sat on loose seats, perhaps on their sea chests, which they took ashore when they left the ship. This may explain why no seats were found in the ships excavated.

The ship's anchor is rather small and light—a little



Section and plan of the Oseberg ship. The top parts of both bow and stern were missing, but they were reconstructed on the basis of fragments. In the center can be seen the keelson, a large block of oak which rests on the keel and bears the boot of the mast in a special socket. Above it the mast is supported by the mast partner, a large piece of oak extending over four crossbeams.

more than three feet long and weighing just under twenty-two pounds. Forged of iron in a graceful shape, it is unusually well preserved. The anchor stock, made of oak, is much more than twice the length of the anchor; we do not know how they were fastened together.

The decorative wood-carving on the ship enables us to date the vessel at about the year 800, just at the beginning of the Viking Age. The ship was, however, not new when it was buried. There are many indications, both from the ship itself and from the objects found on it, that it was about fifty years old. The burial must then have taken place at the middle of the ninth century.

The cart and the three sleighs in the Oseberg find, all made of beechwood and richly decorated with wood-carving, bear the unmistakable stamp of the important people for whom they were made. The cart is in a class of its own, both in quality and size; its total length, including the shafts, is about 18 feet. The body of the cart rests on a pair of trestles which terminate in carvings shaped like men's heads—naturalistic on the back trestle, stylized on the front. The body itself is box-shaped, and semicircular in cross-section. Each end consists of a single piece of wood completely covered with carved designs. The decoration of the cart differs in some respects from other wood-carving in the Oseberg find, but it seems to have been executed by the same craftsman who did the ornamental carving on the ship. Among various animal figures we come across portrayals of human beings—narrative scenes that have no comprehensible connection with the entwined and struggling animals by which they are surrounded.

The sleighs do not present the same problems as the cart. They too are full of decorative carving, but it is purely ornamental and falls more into line with what we know about the artistic traditions of the Viking era. In spite of the decoration on the sleighs, it is clear that they

Right: **Detail of the cart,** showing the stylized head of a man carved on the end of one of the trestles which support the body of the vehicle. *Left:* Wood-carving on the front of the cart. A man is shown struggling with snakes which surround him on all sides, while a four-footed beast is biting him on one side. This probably illustrates the myth of Gunnar in the Snake Pen. Photo Schwitters.

The cart from the Oseberg find. The carving on the shafts is rather primitive and clumsy in comparison with the extremely beautiful decoration on the sleigh shafts. Photo Mittet.

are not purely ornamental. This is shown by plain runners added below the decorated ones on the smaller sleighs to protect the carvings, and also by the presence of three sleigh shafts.

Five strange objects called "animal-head posts" exhibit the very best carving in the whole find. It is not certain what these posts were used for, but all have wooden handles about a yard long that were mortised into holes at the base of the posts. This suggests religious processions in which these objects would have been carried.

It might reasonably be expected that such vast and varied material as the wood-carvings in the Oseberg find would not be absolutely contemporaneous, and this is fully confirmed by closer study. There may be a difference of half a century between the ages of the oldest and newest pieces (from 800 to 850), but in spite of dissimilarities they are all based on a common motif—animal figures. The entire style (or styles) which we meet in this material is part of the animal ornamentation which arose long before the Oseberg period and continued long afterward. In the course of this period, which extended over several centuries, the animal ornamentation underwent a long development through a series of phases. The Oseberg find encompasses material from the period of one of the most radical changes in this development: the transition between two stylistic phases which are now known as early and late Oseberg style.

IF THE OSEBERG GRAVE had not been plundered in ancient times, metal objects of quality comparable to the wood-carving would certainly have been found; as it is, only a few objects of bronze and iron remained for the excavators. But in addition to metal objects clearly of indigenous origin, there are also pieces of metalwork of a quite different sort. There is no doubt that they are Celtic, probably from Ireland. Quite a lot of Celtic metalwork has been discovered in other Viking graves of more or less the same period.

The strangest metalwork in the whole find is that on the so-called "Buddha bucket." This is a wooden pail made of strips of yew held together with brass bands. There is a band of the same metal along the rim, and the

One of the smaller sleighs in the Oseberg find, a little more than six feet long. The undercarriage of this sleigh is obviously too large for the body; it was probably made for the body now on the largest sleigh and accidentally was placed under this smaller one at the time of the burial.

A VIKING BURIAL continued

bucket has a solid cast brass handle. The most remarkable parts of the bucket, however, are the two cast brass attachments for the handle. Identical in form, each consists of a small human figure with a large head, seated with legs crossed; the body consists of a square tablet ornamented with enamel (for the colors see illustration on page 199). The figure immediately calls to mind a Buddha, and so the bucket has retained this name even though it has not been possible to find any direct connection with Buddhist art. This bucket is most probably of West European origin, but more likely British than Irish. There was a rich tradition of enamel technique in Britain during the Viking Age, and similar British enamel work has been discovered in a couple of other Viking finds. Of course we know nothing of the purpose for which this beautiful bucket was used, but it was scarcely an ordinary milk can. The same may be said of another, larger bucket which is practically covered with brass bands. Besides these ornamental pails there is an abundant selection of kitchen utensils: four more buckets and fragments of others, three large barrels (perhaps ship's equipment), a large trough and three smaller ones, five dippers, four dishes, a wooden bowl and remains of others. A small kitchen stool is also included in the equipment, as well as two choppers and a long knife, all with wooden handles. In ironwork we have two cauldrons with a tripod, and a pot-hanger. There are a couple of large iron lamps, a frying pan, a small pan and a hand mill.

Other household goods include beds, a chair, chests, looms (more or less complete remains of four), spindle whorls, flax beaters, iron scissors, a yarn-winder, wooden sewing boxes, combs, two pair of leather shoes and a wooden saddle. Among the farm equipment are a work sled, spades and picks (the last two probably used for building the barrow, or perhaps left by the robbers).

Textile remnants found in the burial chamber are of

An animal-head post from the Oseberg find. This is the so-called "academic" type, of the old style.

wool and silk; there was no trace of linen. This must be the result of conditions in the mound, as we know that flax was cultivated and made into linen in Viking times, and tools for linen work are among the objects in the grave. The silk must have been imported, while the wool is native. Among the woolen materials are fragments of tapestry, and although it is difficult to see what is represented since the pieces are very small and the colors largely lost, it is clear that there is an incredible number of human and animal figures. The people are depicted in processions, while every space between the figures is filled with smaller elements: spears, fylfots (swastikas), knots and birds. It is, of course, almost impossible to say what the various pictures are meant to portray, but as far as one can see, both religious activities and historical motifs are illustrated. With regard to the history of dress, we can learn a great deal—more, in fact, than from the remnants of actual clothes which were found. And last, but

Another animal-head post, this one of the "baroque" type. The great difference between the two styles is at once apparent. Both posts are carved from maple wood.

The "Buddha bucket" found on the Oseberg ship. It is made of strips of yew with brass bands and handle, and is roughly 14 inches high.

A VIKING BURIAL continued

not least, the textile remains teach us about the art and technique of tapestry weaving in Viking times—enough to enable us to say that the weavers were as skilful in their field as were the wood-carvers in theirs. We can scarcely give them higher praise.

It is obvious that the Viking ship finds are of enormous importance to our knowledge of that strange period of Norwegian history called the Viking era. The Oseberg find has given us, for the first time, a clear picture of the important part played by wooden articles in everyday life. All this was unknown before. We can also envisage the furnishings to be found in the home of a Viking chieftain. Besides its importance to cultural history, the Oseberg find is of great significance to the history of art, especially in textile design and decorative wood-carving. It is too soon to assess the importance of the textiles, as the results of research on them have not yet been published. The treasures of wood-carving have opened entirely new perspectives. All our previous knowledge of art in Viking times was based on metalwork, but now we see that this craft must be regarded almost as a minor one in comparison with the monumental wood-carving. It is clear that it was the wood-carvers who were the leading, trend-setting artists; the metal craftsmen followed after them. The carvings show a series of widely differing artistic personalities, including a really creative genius, the so-called "Baroque Master." The carvings from his hand show some salient features in one of the radical stylistic changes that took place in the Viking era. An "animal style" had been inherited from the preceding epoch, but

Detail of the "Buddha bucket," showing one of the handle attachments with its rich enamel work. The figure is about 2¾ inches high.

new tendencies now began to show themselves. The Viking expeditions brought a closer acquaintance with contemporary art in Europe, and one result of this was an awakening feeling for greater plastic effect. This tendency emerges fully in the work of the Baroque Master; with him the new impulses are transformed into a form of expression which we call the "new Oseberg style." It is quite unique that a single find should, in such a manner, throw light on one of the greatest changes in the history of art. It places the Oseberg find in a unique position among archaeological finds, a stroke of luck that we can never hope to repeat even if anything so unlikely should happen as the discovery of yet another find of equal size and quality.

The most difficult but perhaps most intriguing of all the questions connected with the Viking ship finds is whether they are directly connected with Norwegian history. No definite answer can be given, but judging from the archaeological as well as the historical evidence, we can state that in all probability the grave at Oseberg, like the others in the same area, is a royal grave. It has been maintained that the Oseberg burial is that of Queen Aasa, the grandmother of Harald Comely-Hair, but the skeletal remains tend to disprove this theory, and strong criticism has been raised against it on other grounds. That the most remarkable woman in our oldest saga should also have provided us with our strangest archaeological discovery is an attractive thought, but it is no more than a theory. It is really a matter of opinion, but this does not make the theory any less interesting.

Although the beauty of the Bay of Naples can still dazzle the visitor, it is nothing to what it must have been in the days when this region was the chief resort and social center of a powerful and wealthy empire which relished luxury and ostentation. Not only were there towns all around the bay—Surrentum (now Sorrento), Stabiae (now Castellamare), Pompeii, Herculaneum, Naples and Puteoli (now Pozzuoli)—but in between every spot was covered by handsome villas with their parks and formal gardens.

The focus of all this was Baiae, near Pozzuoli on the north shore of the bay. At this point warm medicinal springs used to bubble up out of the hillsides and even up through the water of the bay near the shore. In the last few years Italian archaeologists have laid bare more and more of the great imperial baths which used the medicinal waters. You can go to see these remains, which stretch for half a mile along the shore, but you must not expect them to tell their story as clearly as do the remains of Pompeii.

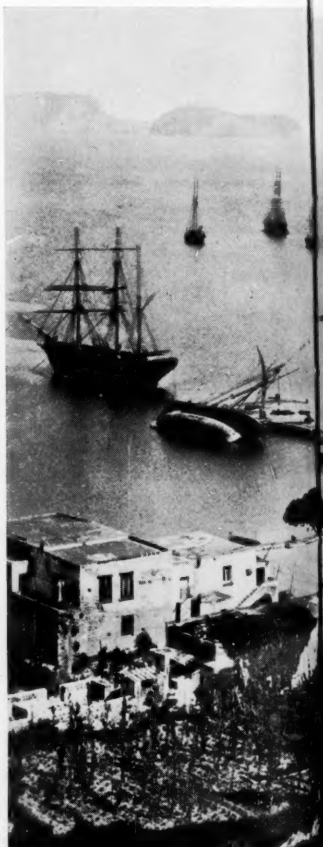
You will see the channels which led the water from the springs, the great bathing pools, the lounging halls and galleries, and service rooms such as laundries or sleeping quarters for the slave attendants. There are slabs and fragments of many kinds of marble, striking colored marbles which the Romans brought from every part of their Empire to decorate their buildings. You will also be able to see the extravagant mixture of architectural styles which is characteristic of the early Empire.

Yet, incomplete and confused as these ruins are compared to the uniquely preserved ruins of Pompeii, in a way we know more of the luxurious cosmopolitan life of Baiae than we do of the solid middle-class life of Pompeii. We can look at the houses and streets of Pompeii, the scribbling on the walls, or the shops which seem ready for business. It is the ordinary life of an ordinary town which is vividly suggested here. The life of Baiae, however, caught the imagination of the writers of the time; they often throw vivid flashes of illumination when speaking of the playground of the fast set. To such men

"LET'S RUN DOWN TO BAIAE"

By RICHARD M. HAYWOOD

THE AUTHOR is Professor of Classics at University College, New York University. His book entitled *The Myth of Rome's Fall* is scheduled for publication later this autumn and should attract much interest among the general public.



View of **Baiae,** on the north shore of the Bay of Naples, near Pozzuoli. This photograph, taken in 1895, shows the site as it appeared before excavations had been undertaken.

the life of Pompeii offered nothing at all to write about.

Even as early as the middle of the first century B.C., before the high tide of wealth and luxury, one had to be a little careful about being seen at Baiae. An enemy of Cicero publicly accused him of being seen there, and the great orator thought it worth his while to reply.

"This stern and gloomy statesman," he said, "will not even let a middle-aged man go down to his own villa when the Senate is not sitting and go over to Baiae to take the waters for his health."

Doubtless many middle-aged men did go down to their own villas in the neighborhood and restore their health with the warm curative baths of Baiae, but the typical visitor was very different. If a gilded youth of Rome decided to run down to Baiae, he could generally go to a villa nearby owned by his family. If the family were staying there, however, he might well prefer not to be under their eyes, and might go to an apartment hotel in Baiae itself.

Elsewhere along the bay towns and private villas took up all the space. The large, well appointed bathing establishments, however, offered attractive accommodations and a round of amusements for visitors who had no villas or who were in the mood for something other than quiet family life. Gradually the town became a center for every sort of pleasure, refined or unrefined, which could pass the time for temporary visitors or attract those who had homes in the region.

The Roman girl was carefully chaperoned before her marriage. She was not the playmate of young men, gilded or otherwise. If a young man wished a female companion while he enjoyed the pleasures of Baiae, she obviously was not going to be a friend of the family, but a young person of very different station—very likely a Greek girl, often a slave. In the old days of Roman conquest she might well have been captured in war, but in the days of the Empire war had pretty well ceased except on the barbarian frontiers. By that time a girl from the more civilized regions was more likely to have been kidnapped by professional slave dealers. Perhaps she had been sold

while very young by her parents, who may have been so poor that they felt their daughter would be better off leading a life where she would be sure of comparative comfort and might achieve freedom or even wealth. Such a girl could easily be rented, as it were, by a wealthy young Roman. Handsome, often talented, carefully trained in the social graces, she would make a thoroughly delightful companion. Roman thought never condemned such arrangements, and especially not in the early Empire, the great days of Baiae, when license of all sorts reached a peak.

Such visitors to Baiae generally went down by road. They would go to an apartment house in the residential section, over the brow of the seaside hills, just above the great group of baths. The young man would have bespoken a comfortable suite of several rooms in one of the sturdy three- or four-story apartment buildings.

The building structure was basically of concrete, but wall surfaces, indoors and out, were adorned with thin slabs of all kinds of marble, brought from Greece or Asia Minor or North Africa. Other parts of the interior walls were adorned with paintings or hung with rich tapestries. The walls of houses at Pompeii still show what skill and taste the local painters had achieved.

Furniture was elaborate and expensive. Prized items were tables made of single cross-sections, several feet across, from the giant citrus trees of Mauretania. These slabs, polished and fitted with ivory legs, sold for more than $25,000. Other furniture was made of wood, marble, bronze or ivory. Skill in wrought iron was traditional in the region, which could provide fine accessories such as statues of young men holding torches for illumination at banquets.

Service was lavish. The young man's retinue would consist of a valet and grooms; the young lady, even if herself a slave, would have a maid. Naturally the service provided by the apartment house was both plentiful and skilled.

If the guest were a newcomer to Baiae, she would first want to see the bay. A short walk, then that great experience, the first view of the Bay of Naples—and a view more striking than the modern one, for the finest handiwork of man was everywhere visible along the shore. Then there were the show places of Baiae itself, the great baths and the villas and the imperial residence. A stroll around the shops was probably not suggested for the first day, but before the visit ended the host undoubtedly took his guest at least once on this round. In the shops every known article of luxury was to be had. There were gems and statuettes, perfumes and furniture, clothing of cotton, muslin, linen, silk and wool, fine silverware, and daggers of Spanish steel.

Another way of becoming acquainted with the locality was by a carriage ride. One could drive out to the very tip of the northern curve of the bay, near the naval station at Misenum, then back through the beautiful countryside behind the shoreline. There one could see a sight dear to the eyes of the typical Roman, that of good farming on good land—wheatfields, truck gardens, orchards, vineyards—and villas of the wealthy among the farms of the common folk.

Baiae had two lakes, Avernus and the Lucrine. These were favorite pleasure spots, good for drowsing away an afternoon or for exchanging sweet nothings with an attractive young lady while circling about in a gondola. Propertius, in the eleventh poem of his first book, laments his Cynthia's visit to Baiae and fears that no good will come of it. He hopes that she is rowing decorously on the lake (as apparently a young lady might do even in that age of slave attendants) or swimming, rather than lying at ease on the sand and listening to the whispered blandishments of some other man.

For a large water party a barge on the bay would be best. Rowed by slaves, the young people would recline under a canopy, watching the colored sails of the fishing fleet or a group of merchant ships arriving from Alexandria. The servants would have brought lunch, kept hot in a *bain-marie,* to serve on the barge. At the southern end of the bay one could get a nearer view of Capri, or perhaps drift inshore to see the show place of Pollius Felix at Sorrento, celebrated by the poet Statius. Statius tells us that hills had been leveled and concrete foundations built out into the water. The house itself was large and filled with costly works of art. Between Statius' lines we can read the owner's pride in the amount of money that had been spent in preparing the ground, building the house

and ransacking the old world of Greece and the East for interior decorations and works of art, as rich Americans used to do in Europe.

When his guest felt the need for a couple of hours in private to enhance her charms, the young man probably went to the baths, which usually were not planned for mixed company. There he would find friends of his own age as well as a good many of his elders whose minds were on their middle-aged joints. After some time in the bath he could lounge in the common room, playing checkers or gossiping, until it was time for dinner.

Dinner was a long meal. Here, too, the whole world was drawn upon. Guinea hens were brought from Numidia, the fish sauce from Mauretania, and the honey from Mount Hymettus in Greece. The local food supplies, however, were luxurious in themselves. In those days the wine and oil of South Italy yielded to none. The specialty farms of the region supplied ordinary poultry, guinea hens and thrushes. Nearby truck farms could supply almost every vegetable, and scientifically managed orchards offered almost every fruit. Fishermen daily brought in a catch of fine fish. One man even built up an oyster ranch where he cultivated the famous oysters of the region.

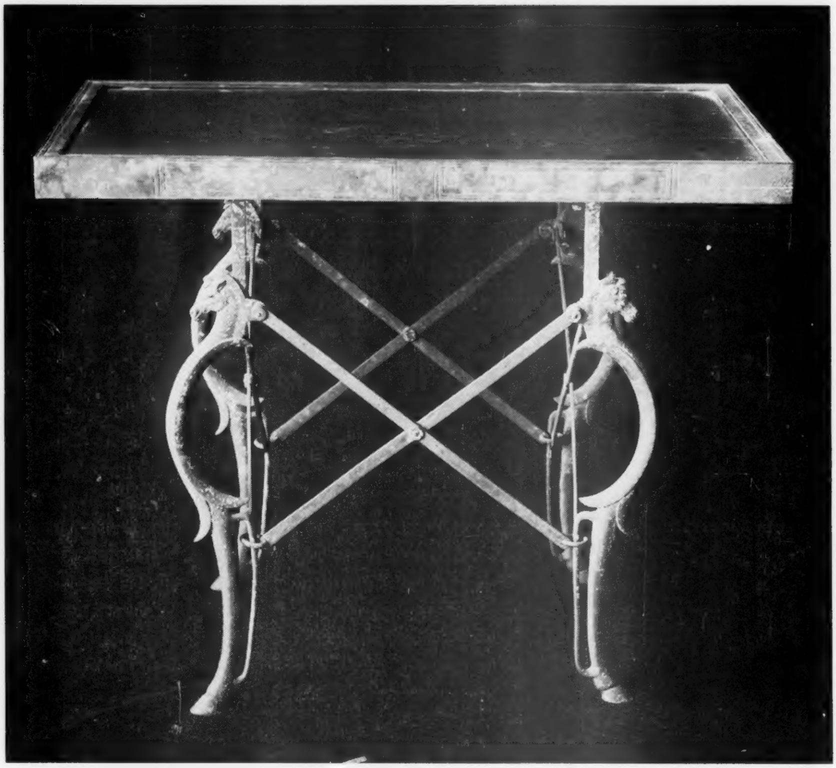
Entertainment of some sort was customary during the meal. The entertainers were highly trained slaves, sometimes privately owned, sometimes hired from entertainment bureaus. For the elderly and serious-minded Roman a reading from Homer or Vergil was satisfying fare. The young at Baiae were likely to prefer a performance of a slightly naughty comedy by Menander or Terence, which could be played in an hour or so without scenery along the side of a spacious dining room. The same stage could accommodate an orchestra and a troupe of dancing girls from Cadiz, who might offer a strip tease with the dessert.

Baiae was a favorite resort of the emperor Nero, under whom luxury and indulgence rose to its greatest height. His parties were gay and extravagant. On one occasion there was a boating party for which the entire surface of the lake was covered with roses. The guests drifted about, eating, drinking, making love, occasionally sparing an ear for the music of the orchestras. On another occasion Nero, apparently wishing a conference with his prime minister Seneca, a middle-aged man who liked to think of himself as a philosopher, summoned him to Baiae. Seneca wrote about his visit to his friend Lucilius.

Bronze lamp-stand similar in subject to lampstands used at Baiae. This example, however, dates from the later Roman Empire and was found in a royal tomb at Ballana, in Nubia. Photograph courtesy W. B. Emery.

"Baiae is definitely no place for a philosopher," he said, "but I managed to get away the day after I went there." Seneca, on whom advancing years had inflicted a tendency to insomnia, found little to please him in the night life of Baiae.

"Drunks," he said, "wandering along the beach, reeling about singing choruses in the middle of the night! Orchestras everywhere!" That the riotous and corrupt living was not confined to the bachelor set is shown by his next remark.



Copy of a bronze Roman table of the early Empire, found at Pompeii. Such tables must have been in use in the luxurious homes of Baiae. Photograph courtesy Chicago Natural History Museum.

BAIAE *continued*

"Some of the great men of old built villas here, but they were simple places built to live in simply, not fitted with mica windows through which one can see to tick off the names of the adulteresses sailing by. No, the place does not have a healthy atmosphere."

Seneca's description of rowdy behavior amid the elegance of Baiae pales, however, beside Petronius' description of real "low life" in the adjacent seaport of Puteoli. Petronius was the "arbiter of elegance" at Nero's court. His oafish master liked elegance, but he also liked to get out on the town incognito to see how the lower elements lived, and Petronius doubtless was compelled to be his companion on many such occasions. In his book, *Satiricon,* he describes the doings of a pair of rascals who wander from one disreputable adventure to another accompanied by a youngster, much in the manner of Huck Finn's journey down the river with the King and the Duke. The language is faithfully reported, racy and ungrammatical; the subject matter is incidents, located in mansions, shops and brothels, which seem frank and realistic even to our modern taste. No other ancient book gives us such a picture of the poor, the slippery and the dissolute elements as does this tale of escapades in the general neighborhood of Baiae.

Nero was succeeded on the throne by the sober and sensible Vespasian. Vespasian surrounded himself with true "old Romans," hard-headed administrators of an Empire which was in some financial difficulty from Nero's excesses, and with the best of the new Romans, sound men from Italy and the provinces whose ability had won them posts in the service of the emperor. The greatest days of Baiae were over, for the example of the throne was potent, and a long line of stern and high-minded emperors was still to come. Yet the beauty and the charm of the Bay of Naples remained, and for many a year the Empire was to be rich enough to afford the

pleasures of this Riviera. The more frivolous element and those whose health led them to seek the baths still resorted to Baiae. Many a young man still brought some elegant mistress there, and many a young matron still "came there as Penelope and went away as Helen," as the poet Martial put it.

BAIAE'S BLACKEST DAYS were the three days of August, A.D. 79, when Vesuvius was in eruption. The Roman nobleman Pliny tells us what it was like in a letter written later to his friend Tacitus the historian, who had asked for details for the history he was writing. Pliny, who was eighteen at the time of the eruption, was living at the villa of his uncle, known as the Elder Pliny. The latter was in command of the naval station at Misenum, just beyond Baiae on the north tip of the shore of the bay, and the villa lay between Misenum and Baiae. Pliny's uncle went out on a ship the first day to do rescue work, but was unable to get near the shore. He died next morning in a friend's villa at Stabiae, down the bay, possibly from an attack of an old illness. Pliny and his mother went through all the terrors of the eruption, although they were far enough away not to be overwhelmed as were the people of Pompeii.

The first day was not too bad at Baiae. There had been tremors of the earth for a few days before, a not unusual occurrence, and people did not easily fall into panic. That night the tremors became so violent that houses fell into ruins. Pliny and his mother got out into the open and ordered the carriage brought around. The violence of the shocks increased so much that the carriage would not stand still, even when stones were placed under the wheels, and they abandoned the idea of using it. The sea below the villa suddenly retreated as the beach rose, creating a new beach covered with stranded marine creatures. Over Vesuvius one could see a huge cloud, split now and then by streaks and sheets of flame. Suddenly the cloud began to roll slowly across the bay. Capri at the far south end disappeared, then the tip of Cape Misenum disappeared, then the cloud was on them like a thunderstorm, raining volcanic ash instead of water. There was darkness "like the darkness in a closed room with the light out." Pliny and his mother, hand in hand, made their way northward, away from the bay, in the midst of a frantic crowd. Soon it grew a little lighter, but this proved to be only the result of a tremendous flaring up of fire from the volcano, which soon subsided. The ashes were falling so thickly that they could not sit down to rest without rising every minute or two to shake off the ash in order to keep from being buried. Finally the darkness went and the sun came out, pale and lurid. The familiar landscape reappeared in a new guise—heavily covered with ashes as if with snow. The worst

Ancient bathing establishments excavated at Baiae. Photograph courtesy Soprintendenza alle Antichità, Campania.

was over, and the terrified crowd flowed slowly back to Baiae and Misenum.

Pompeii and Herculaneum were buried, never to live again; yet the essential prosperity of the region was hardly affected. As the generations went on, however, the axis of the Empire shifted northward toward the great artery of the Danube. There came a time when emperors did not visit Baiae; many of them were never seen even at Rome, but spent their time in camps or in the cities of the north or in those of the eastern empire.

In the sixth century the armies of Justinian fought up and down the peninsula against the Germanic invaders. Each side merely wanted peace in Italy on its own terms. The result was the ruin of what prosperity remained. Italy became a backwater in which cities dwindled to towns and towns to villages. The great buildings of Baiae were gnawed at by time and shaken by earthquakes. They were quarried for building stone and their brilliant marbles were burned by the peasants for lime. Presently even their foundations were covered, waiting for the spade of the archaeologist to bring them to sight again.

Ancient Locri

By ALFONSO DE FRANCISCIS, Superintendent of Antiquities for Calabria

OF ALL THE CITIES of Magna Graecia, with its distinctive place in the history of culture, none stands out more clearly in the transmitted records than Locri. Its position in archaeology is equally prominent, owing to discoveries made at the turn of the last century and, in particular, to the systematic exploration conducted there by the master of South Italian and Sicilian archaeology, Paolo Orsi. The present Superintendent for this area, Dr. de Franciscis, has now initiated a series of new campaigns, and the results already accomplished by him are described here. (Translation by A. W. Van Buren.)

ANCIENT AUTHORS are by no means in agreement when they tell of the origins of Locri. The very name clearly shows that it was founded by colonists who came from the region of central Greece called Locris, but precisely what share the Locrians took in the undertaking, and whether inhabitants of other parts of Greece were also associated with them, is not clear. This colonization must have taken place at the beginning of the seventh century B.C.; a precise date is furnished by the chronology of Eusebius, according to which the foundation of Locri goes back to the year 679/8 or 673/2 B.C.

We may assume that from the first moment there ensued between the newcomers and the people already

Opposite page: **South side** of Ionic temple erected in second half of fifth century B.C. over remains of sixth century edifice. Here the remaining portion of a column has been set up. Quantities of fragments from terracotta revetments found nearby supply precise information as to the upper parts of both temples and their adornment. *Above, left:* Map showing location of Locri and other cities mentioned. *Above, right:* Two archaic altars in foreground; beyond them the altar of the Ionic temple.

established on the spot a lively interchange of commerce and of thought, an amalgam of traditions and of customs. Shortly after the foundation of the city Zaleucus gave the Locrians a body of laws. In a short time Locri sought to extend her dominion over the surrounding territory; threatened as she was to the north by Croton and to the south by Regium, she was subjected to numerous attacks. Conflicts with Regium followed one another with alternating results, but the rivalry with Croton culminated in the famous battle of the Sagra, shortly after the middle of the sixth century B.C., with an overwhelming Locrian victory. Meanwhile, even as early as the beginning of the sixth century, if not actually towards the close of the seventh, the expansion of Locrian territory had already started with a penetration into the interior, and by working across the massif of the Aspromonte it had reached the Tyrrhenian Sea, so that at the time of her greatest power Locri controlled a vast zone which included outstanding centers such as Hipponium, Medma and Mataurus. This period—the first decades of the fifth century—was the happiest of all for Locri, for during that time the city was joined in firm friendship to Sparta and Tarentum. Commerce and the arts flourished, as well as agriculture and horse-breeding.

During the Athenian expedition to Sicily (415-413 B.C.) Locri, hostile to Regium, was an ally of Syracuse. Later, continuing a policy of hostility to the city that

Clay tablet *(pinax)* representing the goddess Persephone seated on a throne with Hades.

Ancient Locri continued

controlled the Straits of Messina, she aided Dionysius I, tyrant of Syracuse, in his operations against Regium and the Italiote League; in return Dionysius assigned to her —in addition to Scylletium and Caulonia on the eastern coast of the peninsula—dominion over Medma and Hipponium on the western coast as well. In 356, Dionysius II was expelled from Syracuse and received at Locri. After a time, however, he seized the power and ruled with so brutal a tyranny, committing such arbitrary, violent misdeeds, that the people revolted. He was driven forth and his family was killed, while a democratic form of government was established (346 B.C.). In the meantime the neighboring Bruttii, who had formed an independent federation, began to exert pressure upon the Greek coastal cities. The steady growth of this power brought for Locri a process of decline that could not be arrested. It was under these circumstances that Locri came into direct contact with the world of Rome.

In 282 B.C. Rome installed a garrison there, but in the wars with Pyrrhus the relations between Rome and Locri underwent various vicissitudes. In the course of the Second Punic War Locri surrendered to Hannibal (216 B.C.), but Scipio recaptured the city in 205. From

this time, and through all the period of the Roman republic and empire, the name of Locri appears frequently in the literary sources, but her importance certainly had diminished, even though Cicero mentions her as the political and cultural center of southern Italy, and Statius gives her the appellation of "rich."

THE LOCATION CHOSEN by the Greek colonists for their settlement lies southwest of present-day Locri. On the coast of the Ionian Sea there stretches a sandy expanse some three hundred meters wide; farther inland is a fertile plain bounded by two large torrents and furrowed here and there by lesser streams. The land at first slopes gently upward, then rises more sharply to reach a height of 150 meters in the three peaks of Castellace, Abbadessa and Mannella. The appearance of the landscape cannot have changed greatly in the course of the centuries: only the coast-line may have retreated slightly, by reason of the natural processes of erosion.

The situation of the harbor is one of the principal problems of Locrian topography. Historical sources mention it more than once, and from them it may be inferred that it is to be sought in the neighborhood of the city. It is not yet clear, however, just where it was and what its relation was to the city proper.

On the other hand, chance finds and systematic exploration, brief soundings and regular excavation campaigns have revealed here and there various interesting aspects of Locri. The circuit of the city's wall, strengthened by massive round or square towers, has been recognized in its general course: it enclosed an oblong area which starts from the water's edge and reaches the

A masterpiece of coroplastic art, probably of local origin, is this restored equestrian group which appears to have formed part of the decoration of a temple, the remains of which were found in the locality of Marafioti. The horseman, whose feet are supported by a sphinx, is datable to the mid-fifth century B.C.

Photographs courtesy of the Soprintendenza alle Antichità, Calabria.

Statuette (somewhat restored) of the goddess Persephone enthroned.

The sacred deposits and the graves have yielded a good number of bronze mirrors, which appear to be characteristic of Locri. They date chiefly between the end of the sixth century and the middle of the fifth century B.C. These mirrors have the handle fashioned in the form either of a human figure (occasionally a group) or of volutes and vegetation motifs.

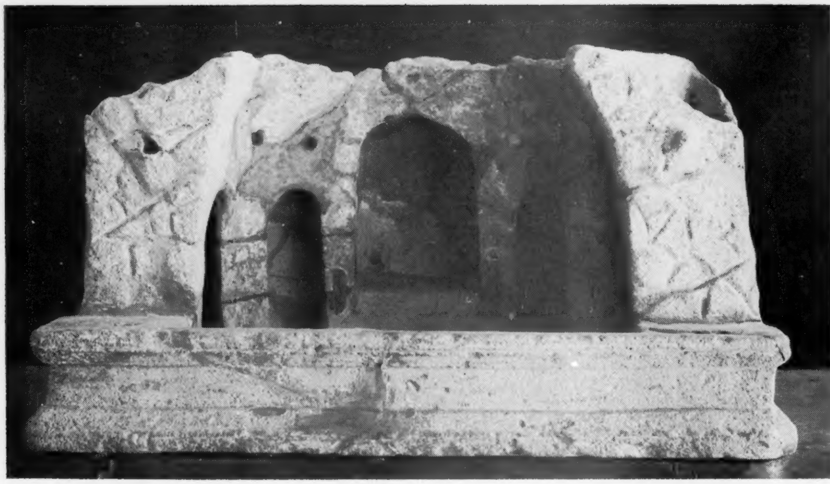
Miniature terracotta altar *(arula),* one of a number found at Locri bearing scenes from myths or having symbolic significance. This one, from the mid-fifth century B.C., represents the contest between Herakles and Acheloös, a theme which appears to have been a favorite with Locrian coroplasts.

Mirror support in the form of a youth; the transition to the mirror itself shows cursory treatment of the volutes.

Ancient Locri continued

three hills we have mentioned—Castellace, Abbadessa and Mannella. In the interior of the city a road, still known as "Dromo," is perhaps the only surviving trace of the street system, although other streets have been found in the locality called Centocamere, in a quarter of private houses which have recently been excavated and which have proved especially interesting for the study of ancient residential construction in Magna Graecia. These houses exhibit various domestic installations, pottery establishments, and a complicated water supply system.

On the slope toward the sea is a great sanctuary which dates from the seventh century B.C. The ruins of the temple are preserved in its two Archaic phases and in a reconstruction of the mid-fifth century B.C. In front of the temple are altars for sacrifice, and all around are bases of small shrines and dedications. The architectural terracottas of the Archaic temple were decorated with painted maeander, scale and leaf motifs. The temple of the Classical period was of the Ionic order and, besides having a rich series of terracotta revetments at the eaves and cornice, was adorned with marble sculptures. Of these latter have survived two equestrian groups (perhaps the Dioscuri), a female statue and a delicate head of a girl. We still are not sure to what divinity the place was sacred (Persephone, Zeus and the Dioscuri have all been suggested); hence it is called simply the



In the Sanctuary of the Nymphs a remarkable group of ex-votos has been found, representing sacred fountain-houses, votive grottoes, etc. These small-scale models in terracotta are especially interesting for the information which they give as to architecture and technique, features which they render even to the most minute details. Fountain-houses more or less closely resembling the one here reproduced formed a feature of many a cult center, and structures of the same type and function also constituted an essential element in the typical Greek community.

Ancient Locri continued

sanctuary of Marasà, after the present name of the site.

Another temple, of the Doric order, has yielded a rich architectural decoration and a fine equestrian group in terracotta. It was situated half-way up the slope, in the locality called Marafioti. At a short distance from this there are the remains of a theater, which has been only partly cleared. Other minor cult centers include a temple perhaps dedicated to Athena and, in the Polisa valley, a sanctuary of the Nymphs. But the most famous of all the sanctuaries of Locri was that of Persephone. Historical sources speak of it as a highly celebrated place of worship, regarded with great veneration; and obviously one of the principal goals of excavation at Locri is the bringing to light of its remains. This sacred edifice has not yet been recognized with certainty among the surviving ruins. It has been suggested that this cult, by reason of its great antiquity and its deep roots in the indigenous stratum of religion, may have been maintained in the open air. On the other hand, there has been discovered on the southwest slopes of the Mannella hill an enormous deposit of ex-votos which is still not completely explored. This has yielded thousands of votive terracottas, bronzes, worked pieces of bone, fragments of vases, etc. Special interest is aroused by the votive tablets *(pinakes),* which represent in delicate relief various phases of the myth and the cult of Persephone. These *pinakes,* together with archaic statuettes representing the goddess standing or enthroned, show that at Locri Persephone was the chief divinity, the Great Goddess—perhaps even more important than she was in Greece proper.

The artistic productivity of Locri is attested not only by the votive terracottas but also by miniature altars showing scenes of combat, and by bronze mirrors, the handles of which are fashioned as human figures or else in volutes, palmettes and the like. This form of art shows direct contact with Greece; nor is the possibility to be excluded that to the same artistic schools to which these products belong there are also to be ascribed larger works such as the equestrian group of Marafioti and those fragments of large fictile statues which have been found upon the Mannella hill.

ARCHAEOLOGICAL NEWS

A Roman Sports Cup: The Maker's Name

The Spring 1958 number of ARCHAEOLOGY contains an authoritative article by Donald B. Harden on a Roman glass sports cup found at Sopron, in Hungary, and now in the Corning Museum of Glass. As Mr. Harden remarks, the interest of the piece is heightened by the fact that it bears around its shoulder the maker's signature, M. LICINIVS DICEVS F(*ecit*); and he suggests that the *cognomen* Diceus represents a misspelling of the name Decius, "a good Latin one," which "would indicate that by this time [first century A.D.] people of western birth had set up glass workshops . . . and did not leave the control of the trade wholly to immigrant eastern proprietors."

Decius is possible, of course, as either a *praenomen* or a *nomen*, but would be most unusual as a *cognomen*. I suggest, and Mr. Harden, with whom I have discussed this matter, is now inclined to agree with me, that Diceus is not the misspelling of a Latin name, but is Latinized Greek: Dic(a)eus = *Δίκαιος*; and that it implies that the owner of the workshop in which this cup was made was of freedman stock and of ultimately servile and east Mediterranean (probably Graeco-Syrian) origin, a fact which would fit in well with what we know of the spread westward of glass-working and glass-workers in the days of the early Roman Empire. E is commonly used for AE in Latin inscriptions of the imperial age: for instance, in an epitaph in the Vatican cemetery—*D M Iuniae Spatal(a)e coniugi Iul(ius) Eutyches* (Jocelyn Toynbee and John Ward Perkins, *The Shrine of St. Peter and the Vatican Excavations*, 1956, p. 118, note 2, iv). And Dicaeus is already known as a servile name: for instance, in a list of *vicarii* (under-slaves) of one Musicus Scurranus, slave of the Emperor Tiberius and *dispensator ad fiscum Gallicum Provinciae Lugdunensis* (an inscription found in a *columbarium* by the Via Appia outside Rome and now in the Lateran Museum: H. Dessau, *Inscriptiones Latinae Selectae* I [1892] no. 1514).

JOCELYN M. C. TOYNBEE

SAA Annual Meeting

The 23rd Annual Meeting of the Society for American Archaeology was held jointly with the 34th Annual Meeting of the Central States Anthropological Society at Norman, Oklahoma, May 1-3. About two hundred people attended. Two symposia were of particular interest, and this report is based primarily on them. Other sessions were devoted to North American, Mexican and Southwestern archaeology. The convenient quarters furnished by the University of Oklahoma made possible the late discussions which are such a stimulating and enjoyable feature of meetings of this sort. An evening open house at the Stovall Museum was followed by a film on the Heyerdahl expedition to Polynesia, presented by Carlyle S. Smith, a member of the expedition. Other events which combined entertainment with business were a field trip to a group of reconstructed Indian villages, a buffalo barbecue and a program of Indian dances which rounded off the three-day gathering.

Even before the meeting opened a group of dedicated souls had been holding sessions which resulted in the symposium on "Relationships Between the Caddoan and Neighboring Areas." We owe the following summary to the chairman, E. Mott Davis.

The chairman first reviewed the current status of Caddoan archaeology. The Caddoan area is located at the western edge of the southeastern United States, in adjacent parts of Arkansas, Louisiana, Texas and Oklahoma. Caddoan complexes are among those usually grouped under the rubrics "Mississippian" or "Temple Mound."

In the first paper Clarence H. Webb spoke on relationships between the Caddoan area and central Louisiana, presenting detailed evidence for correlating the earlier Caddoan manifestations (those of the Gibson Aspect) with Coles Creek of the lower Red River, and suggesting a date about A.D. 700 for the beginning of the Caddoan sequence. Discussants for this paper were James A. Ford, who felt that the Caddoan sequence begins perhaps as late as A.D. 1300, the entire sequence being coeval with the Plaquemine period of lower Red River, and Alex D. Krieger, who thought, on the other hand, that the sequence may begin even earlier than Webb suggested. This discussion reflected a long-standing difference of opinion regarding Caddoan chronology. Archaeologists in the Caddoan area generally regard the temple mounds and elaborate burials of early Caddoan sites as probably ancestral to those of the great Mississippian centers to the east, whereas Mississippi Valley archaeologists are virtually unanimous in considering that the early Caddoan temple mounds are derived from those of the Mississippi Valley. Although the question was far from settled at this symposium, opinions did seem to converge a little more than hitherto, and Dr. Webb struck an intermediate note between the two extremes.

The Mississippian point of view again appeared in James B. Griffin's paper on Caddoan relationships with the Mississippi Valley, especially the area around St. Louis. He pointed to close resemblances between Gibson Aspect Caddoan materials and well developed Middle Mississippi complexes, indicating contemporaneity. Philip Phillips and Stephen Williams produced additional evidence in support of this conclusion.

Robert E. Bell then spoke on relationships between the Caddoan area and the Plains, advancing the provocative hypothesis that the ancestral Wichita and Pawnee may have moved into the Plains about the time of the change from early to late Caddoan. David A. Baerreis, Robert L. Stephenson and Marvin F. Kivett pointed out a series of problems which must be solved before Bell's hypothesis can be properly tested. Here again the question of Caddoan chronology was a crucial point.

Finally, Edward B. Jelks discussed relationships between the cultures of the Caddoan area and the hunting and gathering cultures of Central Texas and the Texas Gulf Coast. He pointed out that influences seemed to flow mainly toward the Caddoan area rather than in the other direction. The nature of the contacts is obscure because the zone of contact is almost unknown archaeologically. T. N. Campbell and J. Charles Kelley, elaborating on the same problem from the standpoint of Gulf Coast and Central Texas cultures respectively, were in essential agreement.

The symposium on salvage archaeology was under the chairmanship of James B. Shaeffer, who has kindly provided a summary. A survey of current problems and programs in the American field was followed by surveys of comparable problems in Canada and Mexico. The chairman pointed out that most of the field work now being conducted in the United States, especially in the West, is salvage archaeology, and that there is likely to be an increase in this type of work.

Highway archaeology was evaluated from the standpoint of state highway departments by Gomer H. Bittle, who concluded that such programs should be supported as historical investigations. He advocated enough supervisory personnel to assure prompt and uninterrupted excavation. Elaine Bluhm discussed her experiences in organizing archaeological data for salvage work by the Illinois Archaeological Survey. Of particular interest was the positive response of the people of Illinois to requests for information on sites and local collections. The follow-up steps of interviews, recording and photography were discussed as methods of augmenting data which should be incorporated in state archaeological files.

Charlie R. Steen described the tremendous scope of river and dam projects proposed by the Army Corps of Engineers and the supplemental soil erosion control dams urged by the Department of Agriculture. He suggested that since the matter of salvage was so urgent, all institutions should give serious consideration to eliminating other field work. He predicted that the great bulk of American prehistoric sites would soon be destroyed or disturbed beyond scientific usefulness. Concluding the American section, Jesse D. Jennings presented a spectacular film of the archaeological survey of the Glen Canyon Dam site in the wastes of southeastern Utah.

Richard G. Forbis and Boyd N. Wettlaufer reported on salvage archaeology in Canada, while the Mexican picture was presented by Ignacio Bernal. The basic problem in both countries is obtaining funds. Although public interest exists, there is more concern for immediate economic needs. This makes it difficult for government administrators to justify historical research. Thus while there has been some archaeological salvage in both countries, it has been minimal in terms of what could and should be done.

For several years we have been reporting the meetings of the Society for American Archaeology, whose objectives are to promote interest and research in the archaeology of the American continents, to direct the efforts of those interested in this field into scientific channels, and to publish and encourage publication of their efforts. The Society also fosters the welfare of local archaeological societies and aids in the conservation of archaeological data, much of which is now threatened with obliteration by new dams, highways and other signs of progress. Both professionals and non-professionals are welcome to join the Society; members receive the quarterly, *American Antiquity,* as well as memoirs published by the Society. Annual membership dues are $8.00. Applications for membership should be sent to Dr. David A. Baerreis, Secretary, Society for American Archaeology, Sterling Hall, University of Wisconsin, Madison 6, Wisconsin.

The dry ditch with ramparts and bastion of the Middle Kingdom fortress.

Egyptian Fortress in Nubia

During the vigorous Middle Kingdom period the Egyptians of the Twelfth Dynasty (1991-1778 B.C.) established a number of trading stations and fortresses along the Nile as they pushed farther and farther south into Nubia. Among these fortified posts was Buhen, which lies on the west bank of the river just north of the Second Cataract, in the northernmost part of the Republic of the Sudan. Its strategic location increased the importance of this Egyptian military colony, and although the town apparently was sacked during the Hyksos period, by the time of the Empire the pharaohs of the Eighteenth Dynasty (1555-1315 B.C.) had rebuilt and enlarged the fortifications. In this period there were within the town temples (one built by Queen Hatshepsut), public buildings, army quarters and workshops for the important gold trade. Tombs in the area were richly furnished. The town evidently flourished until the waning of Egyptian power at the end of the Twentieth Dynasty (1085 B.C.).

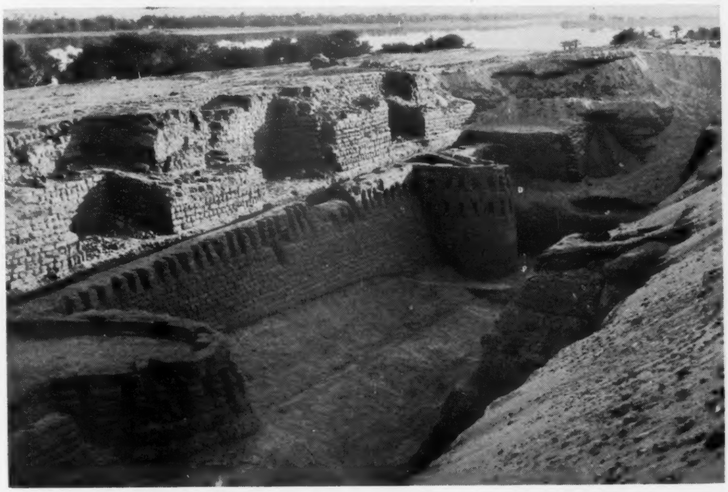
The temple at Buhen had been known from the early nineteenth century, but only in 1892 were the fortifications and the town recognized. In 1910 the University of Pennsylvania explored the site, and during two seasons tombs and cemeteries were excavated and the outline of the fortification traced. The military installation was not examined scientifically, however, until this past winter when an expedition of the Egypt Exploration Society, under the direction of Prof. Walter B. Emery, obtained permission from the Government of the Sudan to excavate at Buhen. The results of this season's preliminary work have been so good that plans have been made to excavate the whole area.

As it happens, the winds from the desert, which have eroded most of the mudbrick buildings at many Nubian fortress sites, in this case have preserved both town and fortification at Buhen by burying them in sand. Thus our knowledge of Egyptian military architecture, hitherto rather elementary, will be greatly enlarged by the opportunity of excavating a fortress much of which is well preserved.

The Egyptians had penetrated as far as Buhen during the First Dynasty (ca. 3200 B.C.) but the main periods of Egyptian occupation of the site were during the Twelfth and Eighteenth dynasties. It appears that the first fortress was built at the beginning of the Twelfth Dynasty. This was a rectangular walled town, surrounded by a dry ditch, which eventually was penetrated and partly destroyed. At the time of Egyptian reoccupation in the early part of the Empire the earlier enclosure became the citadel of the new and larger town, around which a new protecting wall and ditch were built. The new fortification was distinguished by irregular rectangular salients with projecting towers.

The first area excavated in the test clearance was at the north end of the fortress, where some of the Eighteenth Dynasty fortification came to light—a part of the main wall, the foundation of a tower and a ditch. The main wall was 17 feet thick and must have been at least 32 feet high. The ditch was $22\frac{1}{2}$ feet wide, faced with brick and stone, and had been cut to a depth of 11 feet in rock and sand.

After the location and character of the outer fortification were thus established, the expedition turned to the citadel, the old Middle Kingdom fortress. The main walls here were originally $16\frac{1}{2}$ feet thick, and during the later occupation they were strengthened by large buttresses on the outside. Beyond the walls was a wide terrace paved in brick and then a sunken roadway. The latter, it was found, covered and followed the dry ditch of the Middle Kingdom structure. When part of the terrace and roadway was removed a section of the original outer defences was found, a rampart with loopholed parapet, above the steep slope of the ditch, which had been cut into the rock. The slope on the other side of the ditch was built up with brickwork, and above was a narrow covered way and apparently a glacis behind it. Round bastions with double rows of loopholes projected from the rampart above the inner slope, or scarp, of the ditch, enabling the defenders to fire arrows or sling-stones from different angles upon any attackers who might have penetrated the ditch.



General view of the inner fortification at Buhen, showing the Eighteenth Dynasty walls with rectangular salients built upon the Middle Kingdom main wall. The round bastions of the latter project into the dry ditch which was part of the system of defence.

This unique example of Egyptian military architecture, the original Twelfth Dynasty fortress, is fortunately preserved because the builders of the later defences during the Eighteenth Dynasty used elements of the old fortifications as foundations for the new. On the basis of small test excavations made behind the wall it appears that the inner town area is also well preserved. This should provide the basis for further knowledge of domestic architecture and living conditions during the Middle Kingdom of Egypt.

A Sculptured Fish in Oregon

The interesting rock sculpture here illustrated, lying near Five Mile Lock between the Celilo canal and the Columbia River above the Dalles Dam in Oregon, first appeared in the March 10, 1958, issue of "Screenings," published by the Oregon Archaeological Society. Examined in 1956 by Walter P. Schuck and David Cole, this basalt formation was probably the result of erosion by the river over a period of centuries. It evidently offered inspiration to some prehistoric artist who enhanced the natural shape of the stone to produce a flat fish-shaped creature with a little one of the same species riding on its back. The sculpture is about five feet long and eighteen inches wide at its widest point. This type of adaptation of a sculptured figure to a natural rock formation is said to be quite rare in the area; however there is another one, representing a beaver, also of basalt, about ninety miles away. Unfortunately, the "fish" has regained its aquatic element, having been covered by some thirty feet of water, the result of closure of the Dalles Dam in 1957.

Natural rock form carved to resemble fish.

One section of the panel showing the sacrifice of a bull. The bull's left foreleg is tied securely to both hind legs; one of the priests is cutting off the right foreleg.

New Egyptian Relief in St. Louis

The acquisition of significant works of ancient art by museums in this country is always of interest; it is the policy of ARCHAEOLOGY, whenever possible, to bring these acquisitions to the attention of our readers. The description of the fine relief here illustrated, which dates from the period of revival in Egyptian art, the late Twenty-fifth and Twenty-sixth dynasties, is quoted from the *Poster of Events,* May 1958, of the City Art Museum of St. Louis, which "announced the acquisition of a very important Egyptian bas-relief of the Saite period, dating from the end of the XXV Dynasty, ca. 663 B.C. The relief, made of limestone, is composed of three sections showing progressive stages in the sacrifice of a sacred bull. The carving is extremely fine and is typical of the workmanship of artists of this period. The panel is known to have come from the tomb of Prince Mentu-em-het (tomb 34), of the Theban Necropolis, where it constituted part of the lower register of the wall decoration. This tomb is important because it is believed that its reliefs are probably the earliest expression of the so-called Egyptian Renaissance, which started at Thebes in the first half of the seventh century B.C."

Fellowship Awards

Awards for 1958-1959 have been made by several foundations and institutions to scholars in archaeology and allied fields.

Among the recipients of Guggenheim Foundation fellowships are:

FLORENCE ELY DAY, Cambridge, Massachusetts. The history of early Islamic art.

WILLIAM BELL DINSMOOR, Columbia University. The Athenian architecture of the age of Pericles.

JOSEPH FONTENROSE, University of California, Berkeley. The cults of Delphi in ancient Greece.

DAVID NOEL FREEDMAN, Western Theological Seminary. The history and culture of Biblical Palestine.

JOHN FRANKLIN HASKINS, Finch College. Pre-Christian Asiatic culture and art in Siberia and Central Asia.

FRED WALTER HOUSEHOLDER, JR., Indiana University. The early history of the Greek language, especially of newly-deciphered Mycenaean texts.

ALFRED VINCENT KIDDER, Cambridge, Massachusetts. The history of American archaeology.

WILLIAM ANDREW MCDONALD, University of Minnesota. The history of place names of Southwest Greece from the Bronze Age to modern times.

LAWRENCE RICHARDSON, JR., Yale University. The painters of ancient Pompeii.

CHESTER G. STARR, JR., University of Illinois. Early Greek civilization, 1100-500 B.C.

MYRA L. UHLFELDER, State University of Iowa. The history of ancient Roman religion.

JOHN HOWARD YOUNG, Johns Hopkins University. The history and culture of the Greek city of Sunium in the period of the Athenian State.

The American Research Center in Egypt has announced the award of two fellowships for study in Egypt, made possible by a grant from the Bollingen Foundation:

JOHN ALDEN WILLIAMS has been granted a renewal of his fellowship for Islamic studies.

HELEN J. WALL has received the fellowship in Egyptological studies.

Grants for research made by the American Association of University Women include three in archaeology:

JOAN MARIE FAGERLIE will continue a study of Byzantine coins found in Scandinavia, dating from 395 to 565.

JOAN ELIZABETH FREEMAN will seek to develop a broader analysis of a late cultural horizon in the "Upper Mississippi Neosho Focus."

JEANNY ESTHER VORYS expects to complete her study of Hittite figurines.

Eskimo Origins

It is generally taken for granted that man in the New World can trace his origins to the Old World, specifically Eurasia, but evidence of actual relationship is fairly tenuous. Now, however, we learn from Dr. Henry B. Collins of the Smithsonian Institution, Washington, that the origin of the Eskimo can be traced quite certainly to the Late Mesolithic period in Europe and Asia. Dr. Collins' conclusions are based on a comparative study of artifacts from sites in Arctic North America and Eurasia. The Eskimo thus become the first American people whose culture can be traced to a specific time and place in the Old World.

The culture of most of Eurasia during the Mesolithic was characterized by microliths, finely flaked small stone tools—knives, scrapers, projectile blades and the like. Their production involved great patience and skilled workmanship. Very similar implements are found in the American Arctic in early Eskimo and pre-Eskimo habitation sites. The likenesses to Mesolithic and early Neolithic artifacts recently uncovered near Lake Baikal and along the upper Lena River in Siberia are particularly strong. This is the most likely homeland for the earliest migrants into the North American Arctic. They were not Eskimo like those of today, but in all probability were closely related to their ancestors.

To quote Dr. Collins: "The microlithic elements that are most characteristic of the Mesolithic, the so-called geometrics—crescents, narrow triangles, etc.—occur in identical form in areas as far apart as England and Ceylon and in intervening areas of western Europe, Scandinavia, Africa, the Middle East and India. The distribution of these particular forms is strictly Old World; they have not been found in the American Arctic or anywhere in the New World. There are, however, specific resemblances in other implement types—burins (specialized cutting tools), microblades and cores. General resemblances are seen in the small size of the implements—microlithic in both areas—and the use of "backed" blades, which have one edge dulled and thickened like a penknife.

"In Scandinavia we have additional striking similarity to early Eskimo—flint side blades on projectiles and

knives. In India and Ceylon, it was noted, there was the same preponderance of microblades as at early sites in the American Arctic. Edge flakes in the India and Ceylon collections, struck from the edge of a bifaced blade, were identical with those from Southampton Island in Hudson Bay. Flakes of this kind recur as important features of the Mesolithic and early Neolithic of Mongolia. The Mongolian collections also contain enormous numbers of microblades identical with early Eskimo types. It is only in Mongolia that we find such blades comparable in quantity and form to those from various Arctic sites.

"Of even greater importance to our problem are materials from the region of Lake Baikal and the upper Lena River excavated mostly by the Soviet archeologist, Dr. A. P. Okladnikov. The Siberian remains contain a number of implement types specifically like those from early Eskimo and pre-Eskimo sites in Arctic America. . . .

"The close resemblance of specific implement types indicates a firm relationship between pre-Eskimo and early Eskimo cultures and the Mesolithic-early Neolithic cultures of Eurasia. Inner Asia thus appears as the region from which the basic elements of Eskimo culture were derived, in contrast to eastern Asia, which was the source of later elements."

A Note on Schliemann's Death

A fascinating glimpse into the last days of the famous German archaeologist, Heinrich Schliemann, we owe to the kindness of Mr. Edmund A. Bojarski of the School for Advanced International Studies, The Johns Hopkins University:

On December 24, 1890, Henryk Sienkiewicz, the famous Polish novelist, author of *Quo Vadis* and winner of the Nobel Prize for literature, was in Naples with a traveling companion, Jozef Tyszkiewicz, awaiting the start of a long-planned voyage to Africa. The entire trip was described by Sienkiewicz in a series of letters to the Warsaw magazine *Slowo (The Word)*. These were published in book form by the Warsaw newspaper *Tygodnik Ilustrowany (Illustrated Weekly)* under the title *Listy z Afryki (Letters From Africa)* in 1901. These letters have never been published in English despite the fact that there have been 116 English-language editions of Sienkiewicz's other works.

In describing his recollections of Christmas Eve in Naples, Sienkiewicz makes the following comments concerning the death of the great German archaeologist: ". . . As I sat [in the lobby of the hotel on the Piazza Umberto] that evening, a dying man was brought into the hotel. His head bowed down to his chest, eyes closed, arms hanging limp, and his face ashen, he was carried in by four people. This morbid group moved directly past the chair in which I sat, and after a while the manager of the hotel approached me and asked, 'Do you know, Sir, who that sick man is?' 'No.' 'That is the great Schliemann.' Poor 'great Schliemann'! He had excavated Troy and Mycenae, earned immortality for himself, and—was dying. Since that day the newspapers have brought even here to Cairo the news of his death. . ."

REVIEWS OF RECENT BOOKS

CATALOGUE OF ENGRAVED GEMS, GREEK, ETRUSCAN AND ROMAN, by GISELA M. A. RICHTER. xlii, 143 pages, 75 plates, a few text figures. "L'Erma" di Bretschneider (for the Metropolitan Museum of Art, New York) Rome 1956 9000 lire

This is no mere revision of the 1920 catalogue but a new work; the Metropolitan Museum's collection of gems has meantime been augmented by a number of important pieces. All are illustrated in excellent enlargements. The volume is bound to stimulate the study of an important but comparatively neglected branch of Classical art. The Minoan and Mycenaean pieces are not discussed but are, one gathers, intended for separate treatment. With the gems are included, however, a number of gold rings and cameos. A full introduction gives a masterly survey of the whole subject, including a directory of the names of known artists.

There are so many notable pieces that it is invidious to instance separate items. There is the scaraboid depicting a reclining satyr, inscribed with the name of one Anakles—a real masterpiece of ca. 470 B.C. There is a gold ring of ca. 400 B.C. showing Cassandra taking refuge at the Palladium. Another scene from the Trojan cycle is given on an early fifth century Etruscan carnelian scarab—the wooden horse with the Greek warriors climbing out by the light of the waning moon. Several themes on which Dr. Richter has written elsewhere are brought to mind by gems in this catalogue: the important selection of Graeco-Persian gems, almost certainly cut by Greek artists for Persian clients, and the Roman Athena Parthenos (No. 269) which bears on the question whether that famous statue had or had not a support for the hand holding the Victory.

Since gems were designed mainly for individuals, the designs have, on the whole, a greater freedom and range than types found on coins (although many personal signets of officials are to be seen on coins), but one is constantly reminded of the many points of contact with coin engraving. Technically the two are not dissimilar, and it is likely enough that some artists worked in both fields. One or two of the artists' names happen also to be the names of coin engravers, though it is hard to be sure if these are more than coincidental. In any case the parallels in design are numerous; many are noted by Miss Richter, but they can be added to. For instance, the splendid lion-and-bull group on No. 51 can be compared with the coins of Acanthus. In connection with the gem of Brutus (No. 471) with a tiny dagger in the field, it is interesting to recall the famous coin with the portrait of Brutus and a reverse showing the cap of liberty, daggers and the very explicit legend EID.MAR. Then there is the fine Augustus cameo, No. 648; the emperor is seen with bare shoulders turned towards the spectator, partly covered with an aegis, and with a spear held in front. A similar but larger version is the famous Blacas cameo in London. This design occurs also on imperial medallions and coins, from Marcus Aurelius onward, but there is evidence, and from an unexpected quarter, of a Hellenistic prototype as well. The design is found, with variations, on coins issued by more than one king of the Bactrian Greek kingdom in northwest India (e.g. a coin of Amyntas of ca. 90 B.C. *Guide to the Principal Coins of the Greeks,* British Museum, plate 45.21).

G. K. JENKINS

British Museum

THE BIBLE AS HISTORY. A Confirmation of the Book of Books, by WERNER KELLER. Translated by WILLIAM NEIL. xxvi, 452 pages, 76 figures, 52 plates, 3 maps. William Morrow and Co., New York 1956 $5.95

In forty-six chapters—any one of which could serve as an article for a Sunday supplement—Werner Keller has presented a great mass of archaeological data from the lands of the

Bible. The arrangement is chronological. The presentation is imaginative and dramatic, with little time lost in weighing divergent opinions.

The peg on which this vast assemblage hangs is the sentence which the author says kept hammering at his brain as he thought of the sceptical criticism "which from the eighteenth century onward would fain have demolished the Bible altogether—The Bible is right after all!" The pursuit of this theme has required the choice of archaeological results which serve this purpose and the neglect of a fair statement of the many problems of biblical history of which any serious student is aware. Throughout, the impression is given that as excavation proceeds the problems of biblical history will be solved completely and that the traditional text will eventually be vindicated. This hope—as the reviewer knows from recent campaigns at another site in the Conquest narratives—is vain. There is much, indeed, in the archaeological results of the last century in Palestine which can be tied in with biblical history, but the resulting picture is not so clear as Keller paints it. A general flood has not been proved by Woolley at Ur; the Egyptian plagues do not all fit into natural phenomena observable in Egypt; the identification of manna is not so certain as the author would suggest. Strictly speaking, the book is more polemical than descriptive. In the interest of making a good story, Keller frequently supplies details from his imagination: Glueck's night conference with his staff at Tell el-Kheleifeh, for example.

Written as it is in a popular style, the book may serve to arouse interest in biblical archaeology and lead some readers to more accurate sources.

JAMES B. PRITCHARD

Church Divinity School of the Pacific

THE ART AND ARCHITECTURE OF CHINA, by LAURENCE SICKMAN and ALEXANDER SOPER. xxvi, 334 pages, 31 figures, 190 plates. Penguin Books, Baltimore 1956 (The Pelican History of Art) $8.50

This is a welcome and much needed addition to the impressive *Pelican History of Art* which eventually will total over forty volumes. It has been many years since any work has appeared that rivals the present one for comprehensiveness, detail, use of current Chinese sources and readability. It is the joint but not collaborative work of Laurence Sickman and Alexander Soper, recognized authorities in their fields.

Well over half of the text and three quarters of the plates are devoted to the section on art. A concentrated and highly informative introduction sets the stage, and Mr. Sickman then covers some three thousand years of Chinese art in a masterful manner. Students of Chinese archaeology will be disappointed, however, at finding only two paragraphs on the rich and varied pottery of Neolithic China. Perhaps this is because the section on art carries the narrowing subtitle of "Painting and Sculpture." But even with this limitation there should have been at least one plate illustrating some of the anthropomorphic or other designs painted on this superb Neolithic pottery.

This reviewer feels that just because the section on art is limited to painting and sculpture more space should have been devoted to Chapter

5, "Han Dynasty Sculpture." Most of this sculpture is in low relief and closely related to the drawing and painting of that time and deserves, because so few actual paintings exist, more than the few pages devoted to it. It is true that the excellent notes and bibliography can guide the student, but there still is one serious omission. There is no mention of the numerous reliefs discovered in Honan Province beginning in 1927, now generally referred to as the Nanyang reliefs. Many of these differ markedly from the traditional style of Shantung and Honan, showing more freedom and imagination, and emphasizing the animal style. They are known through two Chinese publications, but the whole Nanyang series will soon be available in an English monograph. Bronzes and pottery, too, usually included in works on Chinese art and certainly of major importance, are unduly neglected—probably due to the limitation noted above.

The section on architecture, like that on art, gives a chronological survey. In spite of the lack of remains of early stone buildings, Professor Soper traces the evolution of Chinese architecture through more than three thousand years. This is the best survey available in a western language, and because the architecture of China is not so well known as its painting and sculpture, one cannot help but wish that this section had not been limited in size by editorial policy. It is, in fact, a matter of regret that both of these superb contributions are not full-sized volumes.

RICHARD C. RUDOLPH
University of California
Los Angeles

THE AMASIS PAINTER, by SEMNI KAROUZOU. xii, 46 pages, 44 plates. Oxford University Press, New York 1956 (Oxford Monographs on Classical Archaeology, Volume 4) $12.00

One of the personable artists of the developed Attic black-figure style was the man who decorated vases for the potter Amasis. Painter and potter may have been one and the same; at present we have no proof one way or the other, but the vases preserving the signature of Amasis as their potter bear ornament by a single skilled hand. With these as a nucleus, close to one hundred works have been gathered together by various scholars as the surviving output of a man who worked in the Kerameikos of Athens during the third quarter of the sixth century B.C. These works represent a point of balance in the development of black-figure painting, a moment when the robust silhouette style began to feel its technical limitations, to react by becoming mannered, and presently to give way to new possibilities offered by the red-figure style. The Amasis Painter was a mannerist with commendable restraint, a skilled draughtsman; these qualities resulted in highly decorative scenes which he cast into narratives and vignettes of action. He managed to create emotional communication between participants in his scenes, and heightened it by devices which one currently calls psychological—the butting rams on the shield of the mighty Achilles (plate 36) anticipate the impact of the two heroes once Hector has drawn his defensive sword.

Mrs. Karouzou's monograph is a delayed publication which, fortunately, has been harboring illustrations probably no longer available. She has ex-

panded the text originally prepared on the eve of war and has been able to include addenda from and a concordance to Sir John Beazley's *Attic Black-figure Vase-painters,* published very shortly before her own book. The lively discussion unfolds the artistic development of the painter and presents him in relation to his contemporaries. The catalogue of attributed works is subdivided according to shape and shows that the Amasis Painter had a fondness for amphorae, first, then jugs. Appendices, bibliography and an index of mythological subjects are additional aids for the scholar. The illustrations are a delight, even though a few are below standard for probably unavoidable reasons, and offer forty-four plates of beguiling black-figure vase decoration, the basis of our knowledge of late sixth-century Athenian painting.

FRANCES FOLLIN JONES
The Art Museum
Princeton University

THE COINS OF AELIA CAPITOLINA, by LEO KADMAN. 191 pages, 17 plates. The Israel Numismatic Society, Jerusalem 1956 (Corpus Nummorum Palaestinensium, Vol. 1)

A systematic survey of the coins minted in Palestine is initiated with this volume on Aelia Capitolina, Hadrian's foundation on the site of ancient Jerusalem. There has long been need for a publication such as this. Earlier standard works on Palestinian numismatics presented only a restricted amount of material, sometimes merely the holdings of a single museum, and their general utility has been impaired by the discovery of new and better preserved coins and by the numismatic research of the past half-century. Although the author of the present corpus makes no claim that his record is complete, the scope of his survey is impressive. Over twelve hundred coins of Aelia Capitolina from forty-four public and private collections have been examined and studied. From this body of evidence he has catalogued 206 different coin types, including sixty-two which are here published for the first time.

In addition to the statistical material—the catalogue and lists of types, emperors and legends—there is an interesting section on the history of the site, a commentary on the types and a record of errata in earlier catalogues. Some two hundred coins are reproduced, but the illustrations are for the most part of poor quality. This detracts greatly from the usefulness of the volume and is especially unfortunate in respect to the types hitherto unpublished.

MARGARET THOMPSON
American Numismatic Society

ROMAN ROADS IN BRITAIN. Volume I: South of the Foss Way—Bristol Channel; Volume II: North of the Foss Way—Bristol Channel (including Wales and Scotland), by IVAN D. MARGARY. Volume I: 255 pages, frontispiece, 16 plates, 11 maps; Volume II: 288 pages, frontispiece, 23 plates, 6 maps. Phoenix House, London 1955; 1957 42s.; 50s.

The present work supersedes Thomas Codrington's *Roman Roads in Britain,* first published in 1903 and republished in 1918 and 1919 with some additions. Codrington's book, an accurate and reliable guide a generation ago, was badly in need of revision, as will be seen if one compares his general maps with Margary's. Many conjectural roads on the former's map are traced as certain on the latter's. Codrington used a horse and buggy for his field work; Margary traveled over 19,000 miles by motor car to examine the 6500 miles of roads at present recognized as Roman. Margary examined all the roads described in this work except occasional derelict stretches. His ingenious system of marking roads, indicating main roads by single-digit numbers, main branch roads by two-digit numbers, and minor roads by three-digit numbers, makes it easy for readers to locate roads on the regional maps and on the one-inch Ordnance Survey maps.

Each road is described in readable style and each has a separate bibliography, except where information has not been recorded or a road is a new discovery. These volumes are designed to encourage amateur and professional archaeologists to contribute their findings to the vast store of records that have been accumulating in the many county and local archaeological societies in Britain. Margary's own accounts draw heavily upon information contributed by amateurs, some of it more than a century old, received shortly before the work went to press. The amount of new information that continues to come in may be gauged from the twenty-three pages of addenda to Volume I that have been included in Volume II.

An archaeologist tracing roads in Britain today enjoys services not existing in Codrington's day. Aerial photographs reveal, by light streaks, parched ground over the course of a buried Roman road or, by shading in early morning or late afternoon sunlight, stretches of embankment or ditches unobservable on the ground. In the 1920's the Ordnance Survey adopted a professional attitude towards Roman monu-

The Sixtieth Annual Meeting of

THE ARCHAEOLOGICAL INSTITUTE OF AMERICA

in conjunction with

THE AMERICAN PHILOLOGICAL ASSCCIATION

will be held December 28-30, 1958

at the Netherlands Hilton Hotel in Cincinnati, Ohio

The program of this meeting will be mailed to all members of the Institute. Those who wish to present papers are requested to submit typewritten abstracts, up to 200 words in length, to the General Secretary, ARCHAEOLOGICAL INSTITUTE OF AMERICA, 5 Washington Square North, New York 3, New York, by October 15th.

ments by appointing an archaeologist, O. G. S. Crawford, to its staff. In 1924 the first edition of the Ordnance Survey's *Map of Roman Britain* appeared. Subsequent editions of this map and of Ordnance Survey maps are indispensable reference works for any field worker. Mr. Margary used them as a basis for his survey but differs with them in a number of places.

WILLIAM H. STAHL
Brooklyn College

BRIEF NOTICES

THE BAYOU GOULA SITE, Iberville Parish, Louisiana, by GEORGE I. QUIMBY. 84 pages, 50 figures. Chicago Natural History Museum, Chicago 1957 (Fieldiana: Anthropology, Vol. 47, No. 2) $1.75

A report of the 1940-41 excavation by the Louisiana State Archaeological Survey and the WPA. There are two levels of occupancy, one of Plaquemine period underlying an historic settlement of Natchezan type, of which latter there are historical reports. The artifacts, especially those of Colonial period, are described and figured. A mound and eight houses were completely excavated. A reconstruction of the material culture of the Colonial period, ca. 1682-1750, is given from historical documents.

Ch'üan kuo chi pen chien she kung ch'eng chung ch'u t'u wen wu chan lan t'u lu *(Illustrated Catalogue of Cultural Objects Unearthed During Construction Work in Greater China).* Introduction by CHENG CHEN-TO. 2 volumes. viii, 32 pages, 256 plates. English text 19 pages. Classical Art Publishing House, Shanghai 1955. Distributed by Collet's Chinese Bookshop, London £5 8s.

Although there is no text, this is a useful and important catalogue. The detailed index provides provenience and metric measurements of all objects and brief notes on about one-third of them. The material is arranged geographically and chronologically, ranging from Palaeolithic times to the Ming dynasty. Of particular interest and importance (besides the usual pottery, bronzes, figurines, etc.) is the Pleistocene human skull, iron molds for agricultural implements from the fifth century B.C., mural paintings and a wooden boat model of the later Han dynasty, T'ang and Sung murals and Ming dynasty jewelry. The photography leaves something to be desired, but most of the approximately five hundred objects are clear enough for close study.

THE FIRST BOOK OF ARCHAEOLOGY, by NORA BENJAMIN KUBIE. 65 pages, numerous illustrations. Franklin Watts, New York 1957 $1.95

Miss Kubie has provided for the young reader an excellent guide to the world of archaeology. After the briefest of sketches of the historical development of the Old World, one is told briefly of where to dig, of finds made by accident and of discoveries made by systematic excavation. Stratigraphy, typology and chronology are presented in simple terms. Above all the objective, the significance of archaeology receives emphasis in a concrete manner designed to fascinate the young.

5000 YEARS OF GLASS-MAKING, The History of Glass, by JAROSLAV R. VÁVRA. 191, xxxvi pages, 155 text figures, 430 figures, 32 color plates. Artia, Prague. Edition with English text distributed by W. Heffer and Sons, Cambridge 1954

An attractively produced, lavishly illustrated volume, written with some humor and much prejudice. Without previous knowledge of the subject, and ability to sift facts from theories and propagandistic statements, the reader will find this rather poorly organized work of dubious value. There is a good deal of useful material in the book, but unfortunately the blatant propaganda makes the whole production irritating as well as suspect.

LIGHT WEIGHT SOLIDI AND BYZANTINE TRADE During the Sixth and Seventh Centuries, by HOWARD L. ADELSON. ix, 187 pages, 14 plates, 1 map. American Numismatic Society, New York 1957 (Numismatic Notes and Monographs, No. 138) $5.00

Numismatists and historians have long been puzzled by a series of light weight gold *solidi* which were officially minted by the Byzantine government from ca. A.D. 570 to ca. A.D. 700, concurrently with the regular issues of heavier weight. The author has assembled the evidence for the light weight coins and has produced the most detailed study and catalogue of them thus far published. Analysis of the places of discovery shows that the coins were connected with two great trade routes along which Byzantine wares were carried, one in the Balkans and southern Russia, the other covering northern Italy, Carinthia, southern and western Germany, Belgium, Frisia and England. The coins were not used in the foreign trade to the exclusion of the full weight solidi, but it is plain that they were especially made for foreign commerce. The results of the investigation are of the first importance for our knowledge of Byzantine economics.

THE RED SEA MOUNTAINS OF EGYPT, by L. A. TREGENZA. 247 pages, illustrations. Oxford University Press, New York 1955 $3.40

In 1949 Mr. Tregenza made the difficult journey from the Nile through the Eastern Desert on foot, in company with two or three Arab guides and their baggage camels. While this may be read with pleasure as a travel book, the notes on antiquities and inscriptions are of interest to those concerned with archaeology.

ALGÉRIE MÉDIÉVALE. Monuments et paysages historiques, by GEORGES MARÇAIS. 146 pages, 127 plates, 4 in color. Gouvernement Général de l'Algérie, Sous-direction des Beaux-Arts. Arts et Métiers Graphiques, Paris 1957

The well known authority on the Islamic architecture of North Africa and Spain has here brought together a series of fine pictures covering not only the monuments of mediaeval Algeria, but glimpses of modern life in a still mediaeval setting.

LATE NAZCA BURIALS AT CHAVIÑA, PERU, by S. K. LOTHROP and JOY MAHLER. viii, 61 pages, 14 figures, 21 plates, 5 tables. Peabody Museum, Cambridge 1957 (Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, Vol. 50, No. 2) $4.50

The burial of an important individual with his retainers, of late Nazca times, on the Peruvian south coast provides a valuable group of associated artifacts, particularly textiles and pottery, which are reported on in detail.